



ES30C/ES31C Series Esprit[®] with IOP



C307M-I (11/05)

Contents

Important Safety Instructions	5
Regulatory Notices	6
Description	7
Models	7
Model Numbers	7
Installation	8
TXB Series Translator Board Installation (Optional)	11
How to Remove the Pan and Tilt Cover	11
How to Reinstall the Pan and Tilt Cover	12
Operation	13
Power-Up Display	13
How to Operate Your System	13
Operating Notes	14
Environmental Range	14
Pan and Tilt Functions	14
Scan Speed	14
Preset Functions	14
Random, Frame, and Auto Scanning	14
Zones	14
Patterns	15
Park	15
IR Filter (Models ES30CBW18, ES31CBW18, ES30CBW24, and ES31CBW24)	15
Auto Iris	15
Wiper	15
Open Collector Auxiliary Output	15
Programming – ES30C16/ES31C16	16
Programming – ES30C22/ES31C22	17
Programming – ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24	18
Programming	19
Accessing Main Menu (Preset 95)	19
CM6700	19
KBD200A/KBD300A (Direct Mode Only)	19
CM8500	19
CM9500	19
CM9750	19
CM9740/CM9760/CM9770	20
KBD4000/KBD4002/KBD4000V	20
MPT9500	20
Auto Focus Mode	21
Auto Iris	22
Auto IR Level (Models ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24)	23
Auto Sharpness	24
Az/El	25
Az/El Line	26
Azimuth Zero	27
Backlight Compensation	28
Direction	29
Direction Line	30
Display Duration	31
Gain/AGC	32
Gain Limit	32

IR Filter Mode (Models ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24)	33
Limit Stops	34
Turning Limit Stops On Or Off	34
Programming Limit Stops	34
Line Synchronization	37
Lowlight Limit (Models ES30C22/ES31C22, ES30CBW18/ES31CBW18, and ES30CBW24/ES31CBW24)	38
Park Time Minutes	39
Pattern Length	40
Power-up Mode	41
Proportional Pan	42
Reset Camera	43
Scan Speed	44
Sharpness	45
Shutter Speed	46
Speed Profile	47
White Balance	48
Wiper Mode	49
Zone Blank	50
Zones	50
Zoom	51
Zoom Limit	52
Zoom Line	53
Troubleshooting	54
Maintenance	55
Appendix	56
Specifications	63

List of Tables

A Switch Settings for SW1	56
B Switch Settings for SW2 (P-Type Control)	57
C Switch Settings for SW2 (D-Type Control)	57

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. Only use attachments/accessories specified by the manufacturer.
8. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
10. Installation should be done only by qualified personnel and conform to all local codes.
11. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.
12. Use only installation methods and materials capable of supporting four times the maximum specified load.
13. Use stainless steel hardware to fasten the mount to outdoor surfaces.
14. To prevent damage from water leakage when installing a mount outdoors on a roof or wall, apply sealant around the bolt holes between the mount and mounting surface.
15. AN ALL-POLE MAINS SWITCH with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.
16. A readily accessible disconnect device shall be incorporated in the building installation wiring.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Only use replacement parts recommended by Pelco.

After replacement/repair of this unit's electrical components, conduct a resistance measurement between the line and exposed parts to verify the exposed parts have not been connected to the line circuitry.

The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



WARNING: HAZARDOUS MOVING PARTS. KEEP FINGERS AND OTHER BODY PARTS AWAY.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Description

The ES30C and ES31C Series combine a receiver, pan and tilt, enclosure, and Integrated Optics Package (IOP) in a single, easy-to-install system. The Integrated Optics Package contains an auto-focus camera and lens module with programmable features.

The ES30C and ES31C systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The systems are constructed of lightweight aluminum and have a heater, window defroster, sun shroud, and insulation blanket.

MODELS

ES30C16	Standard resolution, color camera with 160X zoom (16X optical zoom and 10X electronic zoom)
ES31C16	Same as ES30C16, except supplied with window wiper
ES30C22	High resolution, color camera with LowLight™ technology, 220X zoom (22X optical zoom and 10X electronic zoom)
ES31C22	Same as ES30C22, except supplied with window wiper
ES30CBW18	High resolution, color/black-white camera with infrared cut filter, 230X zoom (23X optical zoom and 10X electronic zoom)
ES31CBW18	Same as ES30CBW18, except supplied with window wiper
ES30CBW24	Low-light, high resolution, color/black-white camera with infrared cut filter, 240X zoom (24X optical zoom and 10X electronic zoom)
ES31CBW24	Same as ES30CBW24, except supplied with window wiper

MODEL NUMBERS

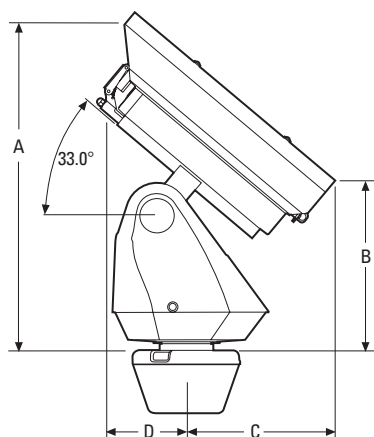
Model		Format	Pedestal Mount		Wall Mount	
			24 VAC	120/230 VAC	24 VAC	120/230 VAC
16X Color	Standard	NTSC PAL	ES30C16-2N ES30C16-2N-X	ES30C16-5N ES30C16-5N-X	ES30C16-2W ES30C16-2W-X	ES30C16-5W ES30C16-5W-X
	With Wiper	NTSC PAL	ES31C16-2N ES31C16-2N-X	ES31C16-5N ES31C16-5N-X	ES31C16-2W ES31C16-2W-X	ES31C16-5W ES31C16-5W-X
22X Color	Standard	NTSC PAL	ES30C22-2N ES30C22-2N-X	ES30C22-5N ES30C22-5N-X	ES30C22-2W ES30C22-2W-X	ES30C22-5W ES30C22-5W-X
	With Wiper	NTSC PAL	ES31C22-2N ES31C22-2N-X	ES31C22-5N ES31C22-5N-X	ES31C22-2W ES31C22-2W-X	ES31C22-5W ES31C22-5W-X
23X Color/B-W	Standard	NTSC PAL	ES30CBW18-2N ES30CBW18-2N-X	ES30CBW18-5N ES30CBW18-5N-X	ES30CBW18-2W ES30CBW18-2W-X	ES30CBW18-5W ES30CBW18-5W-X
	With Wiper	NTSC PAL	ES31CBW18-2N ES31CBW18-2N-X	ES31CBW18-5N ES31CBW18-5N-X	ES31CBW18-2W ES31CBW18-2W-X	ES31CBW18-5W ES31CBW18-5W-X
24X Color/B-W	Standard	NTSC PAL	ES30CBW24-2N ES30CBW24-2N-X	ES30CBW24-5N ES30CBW24-5N-X	ES30CBW24-2W ES30CBW24-2W-X	ES30CBW24-5W ES30CBW24-5W-X
	With Wiper	NTSC PAL	ES31CBW24-2N ES31CBW24-2N-X	ES31CBW25-5N ES31CBW24-5N-X	ES31CBW24-2W ES31CBW24-2W-X	ES31CBW24-5W ES31CBW24-5W-X

Installation

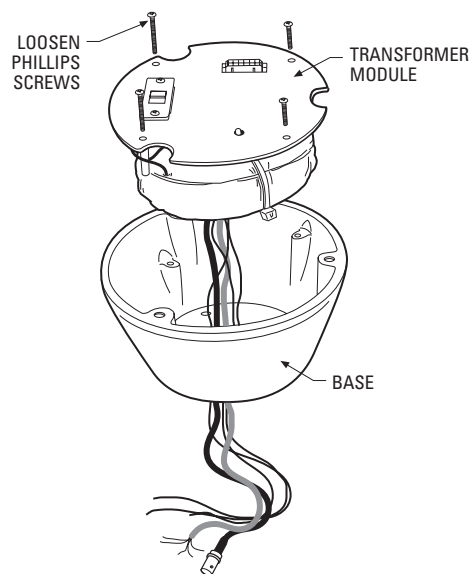
1. When installing the ES30C/ES31C Esprit® system, allow for sufficient clearance between the top of the unit and overhead obstructions. This will prevent interference when the enclosure is driven to its maximum elevation of 33 degrees.

Model	ES30	ES31
A	16.6 (42.5)	16.9 (42.9)
B	9.4 (23.9)	9.7 (24.6)
C	7.1 (18.1)	7.6 (19.2)
D	4.2 (10.7)	4.6 (11.7)

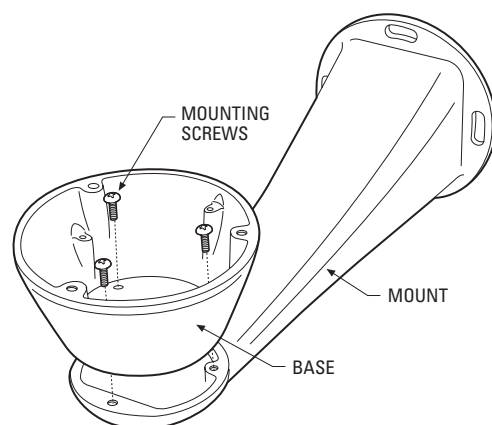
NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.



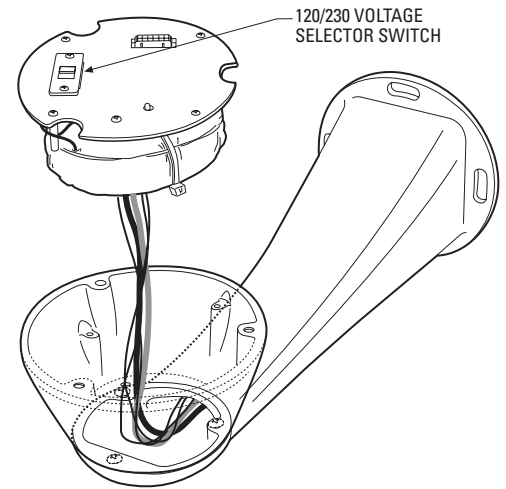
2. Remove the transformer module from the base of the system by loosening the four Phillips screws and lifting the module.



3. Attach the base of the system to an Esprit mount (EWM or EPA) with the three 10-32 screws and washers (supplied).



4. Route the wires and cables through the center of the Esprit mount. Reinstall the transformer module into the base. The transformer module can be positioned in the mount base in only one orientation.



5. **ES30C-5/ES31C-5 Models Only:** Set the 120/230 voltage selector switch on the transformer to the appropriate voltage.
6. Connect wires and cables.
 - a. Connect to power. Use the two supplied clamp connectors to connect the AC line and neutral.

120/230 VAC

Black wire	Input (AC Line)
White wire	AC Neutral
Green wire	Ground

24 VAC

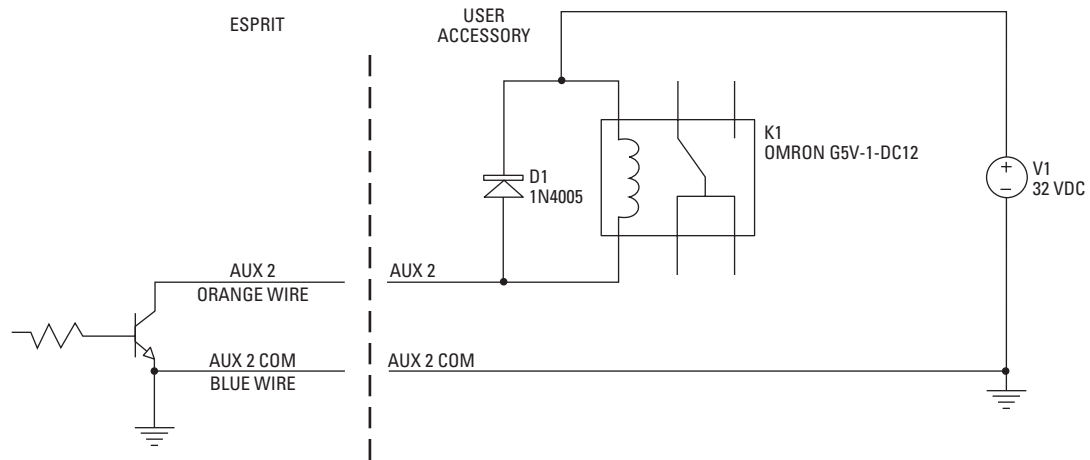
White wire	Input (AC Line)
White wire	AC Neutral
Green wire	Ground

- b. Connect the video coaxial cable to the BNC connector.
- c. Connect the wiring for a two-wire or four-wire control system. This step does not apply to Coaxitron® control systems.

Green wire	RX-
Red wire	RX+
Black wire	TX-
White wire	TX+

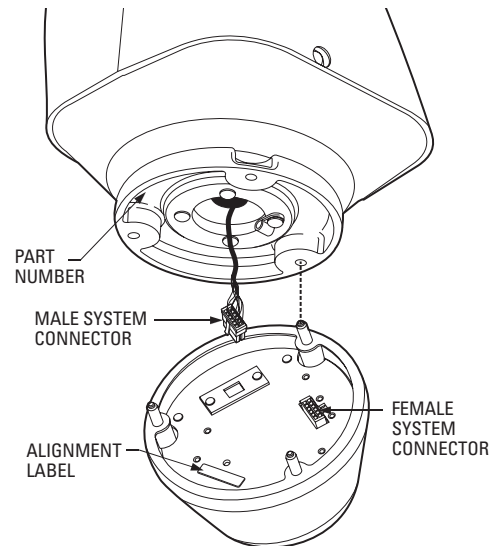
- d. Connect AUX 2 (optional). Refer to the schematic drawing for an example of how to wire AUX2.

Orange wire	AUX 2
Blue wire	AUX 2 COMMON



NOTE: CURRENT MUST NOT EXCEED 40 mA.

7. Install mount; refer to the installation manual supplied with the mount for instructions.
8. Turn on the power. If the red LED lights, turn off the power and proceed to the next step. If the red LED does not light, refer to the *Troubleshooting* section.
9. Plug the male Esprit system connector, located on the bottom of the pan and tilt, into the female Esprit system connector located on the transformer module. Align the pan and tilt part number with the alignment label of the base and then attach the pan and tilt to the base with three 1/4-20 nuts and washers (supplied).

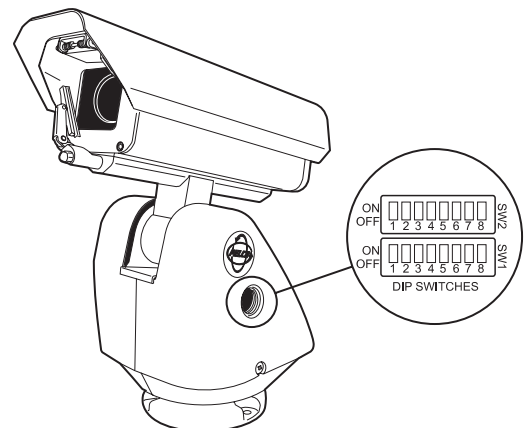


10. Set the receiver address and system baud rate by configuring DIP switches SW1 and SW2.

NOTE: Switch settings have no effect on Coaxitron control signals. The Esprit will sense and automatically select input from Coaxitron control signals in either standard or extended mode.

To set the DIP switches:

- a. Remove the plug from the left cover of the pan and tilt. It is not necessary to remove the pan and tilt cover.
- b. Set the baud rate (SW1) and receiver address (SW2). For switch settings refer to the labels located on the inside lid of the housing or Tables A and B in the *Appendix*.
- c. Replace the plug.



11. Refer to the Operation and Programming manual for instructions on how to use your ES30C/ES31C Series Esprit Integrated Positioning System.

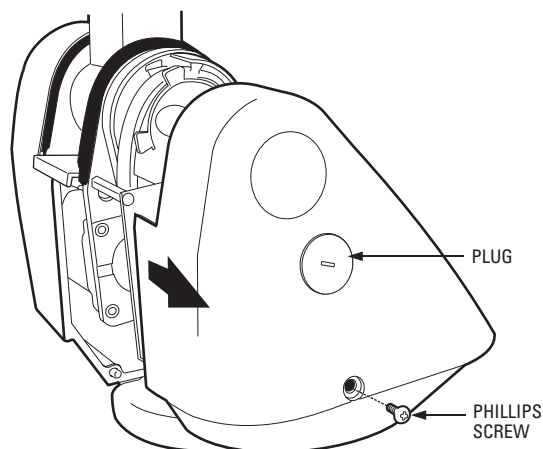
TXB Series Translator Board Installation (Optional)

Pelco's TXB Series allows controllers from other companies to communicate with the Esprit system.

To install a TXB Series board, remove the left cover of the pan and tilt. Once the cover is removed, refer to the manual supplied with the translator board to complete the installation.

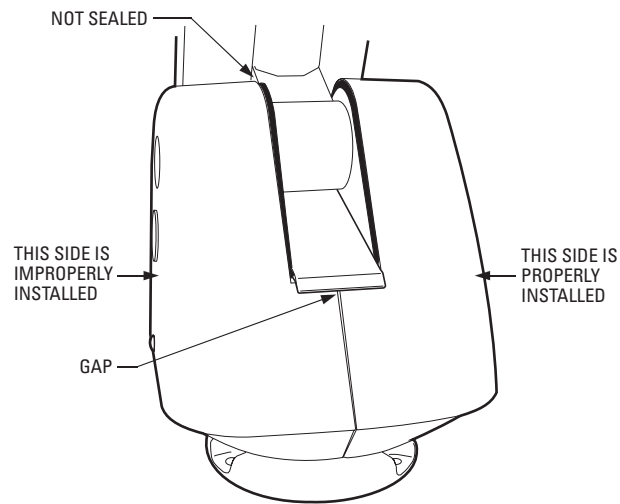
HOW TO REMOVE THE PAN AND TILT COVER

1. Unscrew the Phillips head screw located on the left cover of the pan and tilt.
2. Remove cover and place to the side.



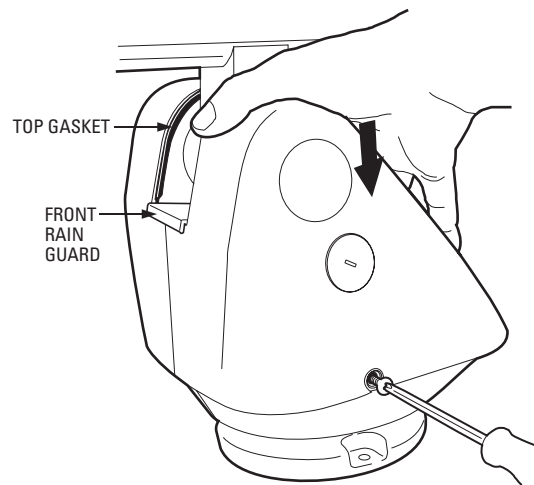
HOW TO REINSTALL THE PAN AND TILT COVER

The pan and tilt covers must be properly seated and have a tight seal all the way around when installed.



To reinstall the pan and tilt cover, do the following:

1. Properly position the cover and slide it into place. The sides of the cover must fit under the front and back rain guards of the pan and tilt, and the top of the cover must seat against the lip of the top gasket.
2. Apply pressure and push the top of the cover down to align the fastener holes.
3. Insert the Phillips head screw and tighten. Tighten until the screw will not turn.



Operation

POWER-UP DISPLAY

When the system is powered up, the selected protocol, revision number, and other information is displayed on the monitor. For example, the screen might show the following information:

ESPRIT 16X IOP 1.0h
CONFIGURE DONE

D Address 1
P Address 2
Comm 2400, N, 8, 1
CAMERA XXXX-XXXX

The information displayed depends on the selected protocol (C, D, or P) and the menu selection for power-up mode. (Refer to *Power-Up Mode* in the *Programming* section).

The information remains on the monitor until the system is moved.

HOW TO OPERATE YOUR SYSTEM

Operation	How to Control
Pan and Tilt	Move joystick left/right and up/down.
Scanning Stop scan Random scan Frame scan Auto scan	Call preset 96. Call preset 97. Call preset 98. Call preset 99.
Zoom Far	To zoom far, do the following: 1. Press the Zoom Tele button or turn the joystick clockwise until zoom stops at the optical zoom¹ limit . 2. Release the button or joystick. 3. To continuing zooming (digitally), immediately press the button or turn the joystick clockwise again until you have the picture you want or reach the digital zoom² limit .
Zoom Wide	Press the Zoom Wide button or turn the joystick counterclockwise.
Presets	Refer to the documentation supplied with the controller.
Patterns	Refer to the documentation supplied with the controller.

¹ Optical zoom magnifies the image and the picture remains clear. Resolution is constant.

² Digital zoom magnifies the image and the picture may appear pixilated. The larger the zoom limit the greater the reduction in resolution.

OPERATING NOTES

ENVIRONMENTAL RANGE

The operating temperature ranges from a minimum of -50°F (-45°C) to a maximum of 122°F (50°C) for sustained system operation or 140°F (60°C) absolute maximum. The entire unit can de-ice and be operational in two hours from a temperature of -13°F (-25°C). The thermostatically controlled heater consumes 10 watts and cycles on at 70°F (21°C) and off at 85°F (29°C), while the window defroster runs continuously and consumes 2.5 watts.

PAN AND TILT FUNCTIONS

Controller Type	Pan (Capability – 360° Continuous Pan Rotation)**	Tilt (Viewing Range – +33° to -83°)***
Fixed speed	Speed determined by controller	Speed determined by controller
*Variable speed	0.1 to 40° per second, depending on joystick and zoom positions	0.1 to 20° per second, depending on joystick and zoom positions
*Turbo Mode	100° per second	Does not affect the tilt speed
*Preset Mode	100° per second	30° per second

*50 mph wind-speed profile.

**If manual limit stops are set, “Pan Limit” appears on your monitor when a limit stop is reached (except when you are programming or running a pattern). This does not apply to scan limit stops.

***When the system reaches the upper limit, “Tilt Limit” appears on your monitor (except when you are programming or running a pattern).

If the proportional pan mode is enabled (refer to the *Proportional Pan* in the *Programming* section), the pan and tilt speeds will depend on the amount of zoom. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom. This slowing does not happen when going to a preset but does occur in turbo mode when high zoom is selected. The minimum pan and tilt speeds are 0.1 degree per second at full zoom.

SCAN SPEED

Scan speed is adjustable from 1 to 40 degrees per second through the programming menu.

PRESET FUNCTIONS

The Esprit® system is capable of going to 64 preset locations, each with a 20-character label. The presets are numbered 1-32 and 35-66. Refer to the documentation for your control system for programming presets.

If you command the pan and tilt to go to an undefined preset, erratic operation may result.

Presets 33 and 34 are fixed commands, meaning that you cannot program them. Preset 33 is the “flip” command, which will pan the system 180 degrees. Preset 34 is the “pan zero” command, which will pan the system to the factory-determined zero reference point.

RANDOM, FRAME, AND AUTO SCANNING

Select preset 97 (30) to start random scanning. Select preset 98 (31) to activate frame scanning (three seconds of scanning followed by a three-second pause). Select preset 99 (32) to start auto (continuous) scanning. Scan limit stops are controlled by software. Refer to the *Limit Stops* section to program the scan limit stops.

When the pan and tilt reaches a scan limit stop, it reverses direction. Select preset 96 (29) to stop a scan. Any pan and tilt or lens command also will stop a scan.

ZONES

A zone is a programmed pan area with set boundaries and identifying label. The Esprit system has a maximum of eight zones, each with a 20-character label. Zones can be programmed to blank video when the camera pans into the zone area. If a zone is blanked, the system displays the message, VIDEO BLANK. (Refer to *Zone Blank* in the *Programming* section for instructions.)

PATTERNS

The Esprit system can do either one full pattern (1.5, 3, or 6 minutes long) or two half patterns (.75, 1.5, or 3 minutes long). This pattern can consist of any standard pan and tilt or lens command. Presets, flip, digital zoom, proportional pan, and turbo are not allowed in a pattern. Zones can be enabled while running a pattern. Refer to the documentation for your control system to program and run patterns.

PARK

If the system does not receive any commands for a specified period of time (refer to the *Park Time Minutes* section), the system goes to preset 1 and parks. If the time specified is zero, or if preset 1 has not been programmed, the pan and tilt will not park.

IR FILTER (MODELS ES30CBW18, ES31CBW18, ES30CBW24, AND ES31CBW24)

The ES30CBW18, ES31CBW18, ES30CBW24, and ES31CBW24 models have an IR (infrared) lens filter that can switch in and out, automatically or manually, depending on how the system is programmed. When the filter is IN, the camera produces a color picture. When the IR filter switches OUT, the picture changes to black and white, increasing visibility in low light conditions.

The Auto IR Level setting controls automatic operation of the filter. To manually override automatic operation, use presets 88 (filter IN) and 89 (filter OUT). The unit will remain in manual control until it is panned or tilted more than 15 degrees.

NOTE: LOW LIGHT does not mean NO LIGHT. Some type of illumination is required (street light, IR light, etc.).

AUTO IRIS

If auto iris is in the auto mode, it remains that way until you manually open or close the iris. The system will return to auto iris when it is panned or tilted more than 15 degrees.

WIPER

The ES31C Series features a window wiper to clear moisture from the enclosure glass. There are two modes of operation for the wiper, momentary and continuous. The wiper mode is easily set up through on-screen programming (refer to the *Wiper Mode* section).

To operate the wiper do the following:

Momentary Mode: To operate the wiper one full cycle, press the AUX 1 button on your controller. Each press of the button operates the wiper one full cycle, even if the AUX 1 button is latching. If AUX 1 is latching, the first press will activate the wiper (open the latch). Pressing AUX 1 a second time closes the latch, but will not cycle the wiper. Press the AUX 1 key again to cycle the wiper.

Continuous Mode: To operate the wiper press the AUX 1 button on your controller. The wiper will continue to operate until the AUX 1 button is pressed again or until the programmed cycle is completed.

NOTE – CM9740 and CM9760 matrix systems only: For the wiper to operate in continuous mode, the AUX 1 function in the camera file must be set to latching. If the AUX 1 camera file is not latching, the wiper will only operate in momentary mode, even if the Esprit wiper is programmed for continuous operation. Refer to the operation manual supplied with the CM9740 or CM9760 matrix system for instructions.

OPEN COLLECTOR AUXILIARY OUTPUT

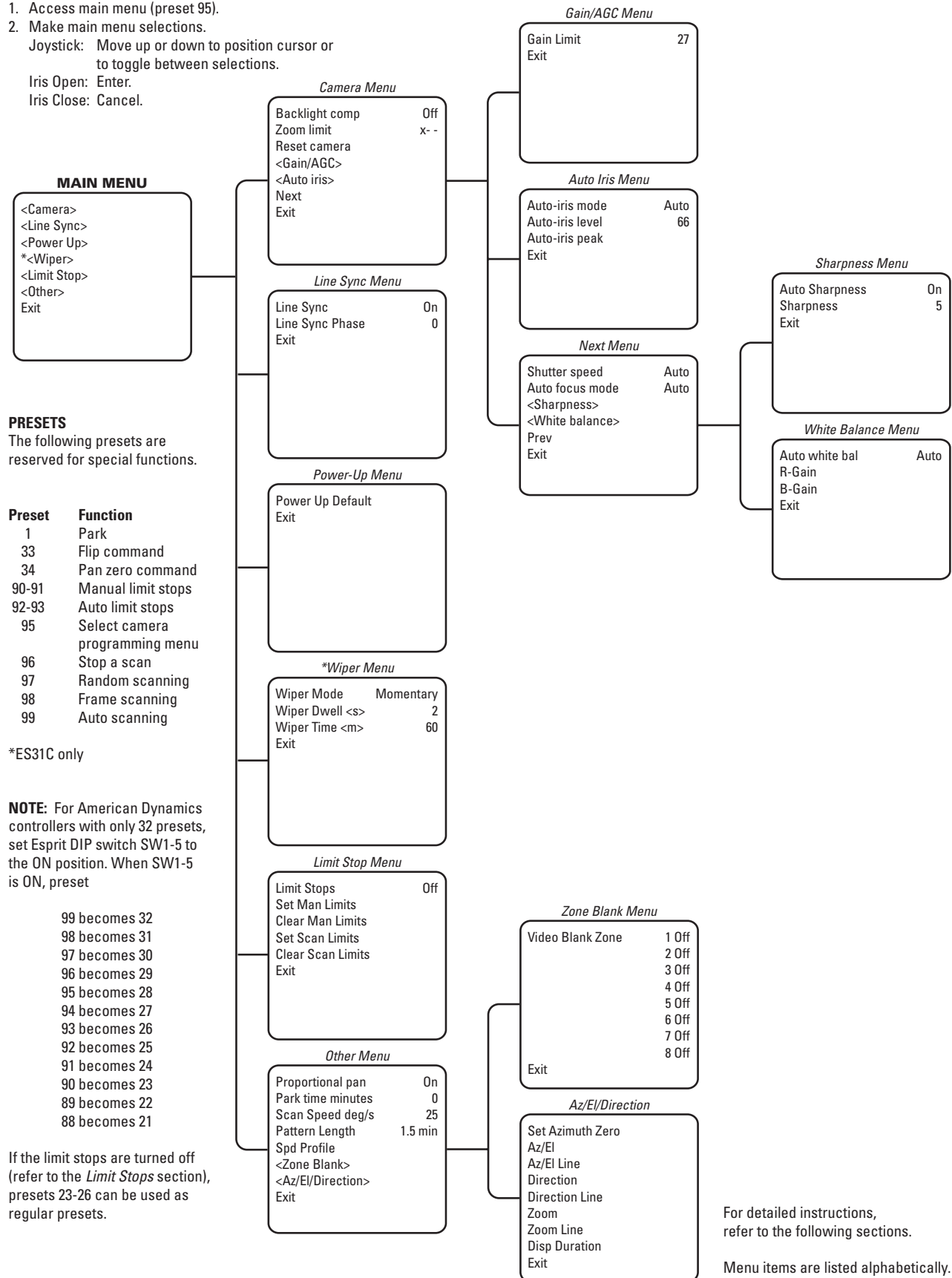
An AUX 2 command from the controller will activate a device, such as a relay. The output will remain active for two seconds and then deactivate, even if the controller is set to latching mode.

Examples of devices that can be used with AUX 2 are a washer assembly (not supplied by Pelco) or a latching relay (not supplied by Pelco) attached to control a gate, lights, etc.

If a relay is used it must require less than 32 VDC and 40 mA to trigger the relay coil. The relay must be placed within 100 feet (30 m) of the Esprit unit.

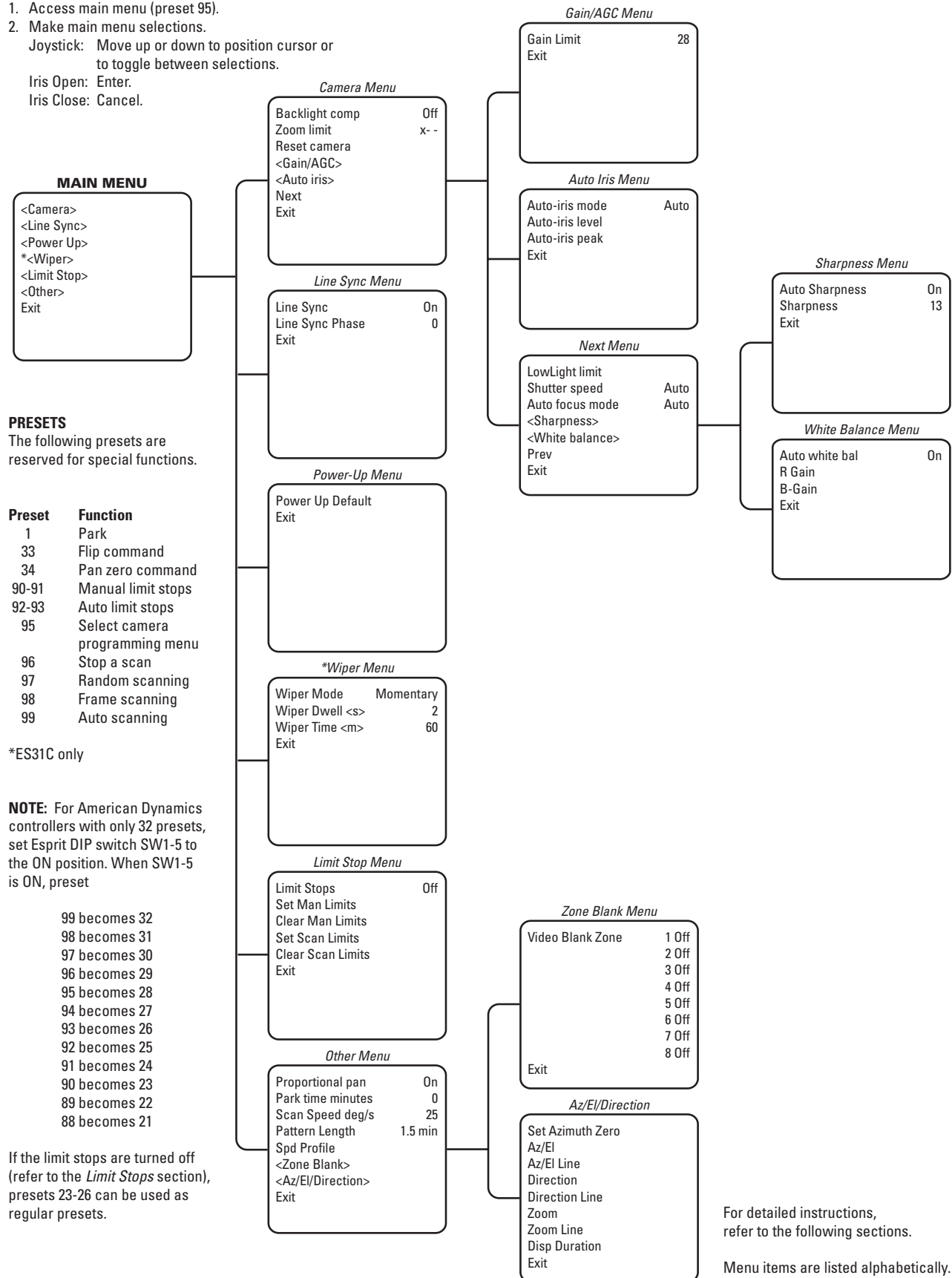
Programming – ES30C16/ES31C16

1. Access main menu (preset 95).
2. Make main menu selections.
Joystick: Move up or down to position cursor or to toggle between selections.
Iris Open: Enter.
Iris Close: Cancel.



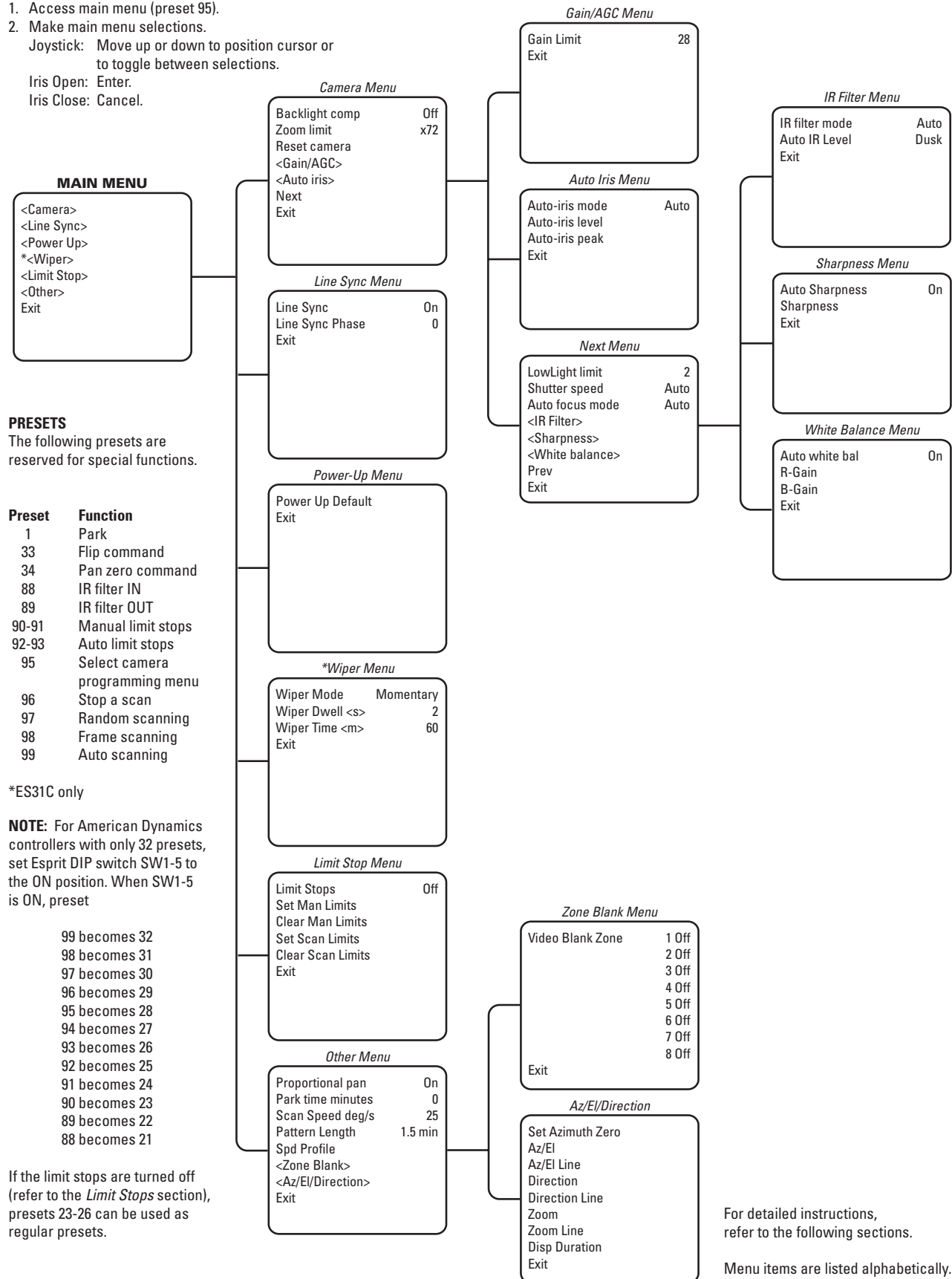
Programming – ES30C22/ES31C22

1. Access main menu (preset 95).
2. Make main menu selections.
Joystick: Move up or down to position cursor or to toggle between selections.
Iris Open: Enter.
Iris Close: Cancel.



Programming – ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24

1. Access main menu (preset 95).
2. Make main menu selections.
Joystick: Move up or down to position cursor or to toggle between selections.
Iris Open: Enter.
Iris Close: Cancel.



Programming

ACCESSING MAIN MENU (PRESET 95)

You can call up the main menu on your monitor by programming (setting or creating) preset 95 (28 if in 32-preset mode).

Programming preset 95 for Pelco's controllers varies according to the type of controller you are using. Instructions for programming preset 95 are given below for various Pelco controllers.

CM6700

1. Enter the number of the camera and press the CAM key.
2. Enter 95 and hold the PRESET key for two seconds.
3. In the Edit Preset menu, arrow to SET and press the ACK key. The main menu appears.

KBD200A/KBD300A (DIRECT MODE ONLY)

1. Enter 95.
2. Hold the PRESET key (approximately 5 seconds) until the main menu appears on the screen.

CM8500

1. Enter the number of the camera and press the CAM key.
2. Highlight PRESET in the Camera menu and hold down the joystick button until the Set Presets prompt appears.
3. Enter 95 and press the PRESET key. The text editor appears. Select ENTER and the main menu appears.

CM9500

1. Enter the number of the camera and press the CAM key. The Main menu appears.
2. Highlight SETUP in the Main menu and press the SELECT key.
3. Highlight CAM in the Setup menu and press the SELECT key.
4. Highlight PRESET in the Camera menu and press the SELECT key.
5. Enter 95 and press the F1 key. The main menu appears.

CM9750

1. Turn the KEY SWITCH to the ON position.
2. Press the PROG key. PROGRAM appears on the LCD display.
3. Press the PRES key. The PRESET prompt appears.
4. Enter 95 and press the ENTER key. The main menu appears.
5. Turn the KEY SWITCH to the OFF position.

CM9740/CM9760/CM9770

1. Press the ESCAPE key to open the Main menu. Select DEF. The Define Menu appears.
2. Enter your four-digit PIN ***if this is your first time entering this mode.***
3. Enter 95 and select PRST. The main menu appears on the monitor.
4. Select the Quit icon to return to the default menu.

KBD4000/KBD4002/KBD4000V

1. Press the SPOT MONITOR key.
2. Enter 95, and then hold the PRESET key (approximately five seconds) until the main menu appears on the screen.

MPT9500

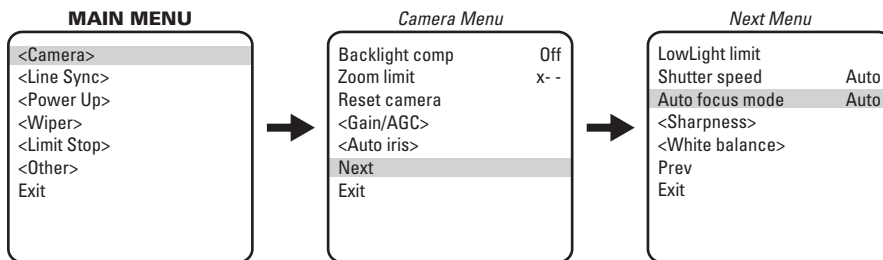
Standard Coaxitron® Mode

1. Enter 95 and press the PRESET SET key.
2. Position the asterisk in the YES row and press the F1 key. The main menu appears.

Extended Coaxitron or RS-485 Mode

1. Enter 95 and press the PRESET SET key.
2. Press the F2 key. The main menu appears.

AUTO FOCUS MODE



There are two auto focus modes:

Auto: If auto focus is in the auto mode, pressing the Focus Far or Focus Near button will place the focus in the manual mode. The system will return to auto focus if you pan or tilt the unit or do a zoom function.

Off: If the mode is set to off, the system will operate in the manual mode with one exception. If you issue a command to go to a preset, auto focus will turn on and remain on until you press the Focus Far or Focus Near button.

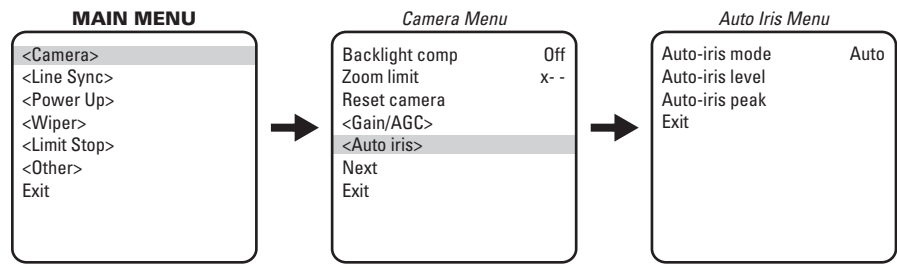
NOTE: Auto focus does not operate at shutter speeds longer than 1/8 of a second.

To change the mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next.
5. Press the Iris Open button to go to the next camera menu.
6. Position the cursor (>) beside Auto Focus Mode.
7. Press the Iris Open button. The cursor moves to the right, beside the word Auto or Off.
8. Move the joystick up or down to toggle between Auto and Off.
9. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

AUTO IRIS



The following are the settings for auto iris:

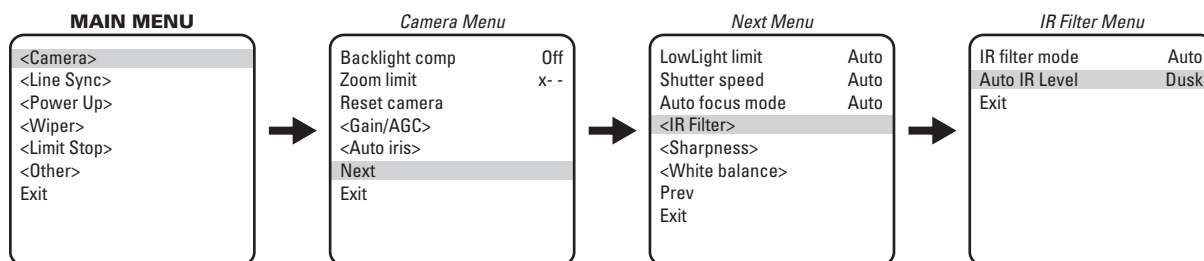
Mode
Level
Peak

To change the settings for auto iris:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Auto Iris.
5. Press the Iris Open button. The Auto Iris menu appears.
6. Position the cursor (>) and select one of the following settings:

MODE	<p>The cursor moves to one of two choices:</p> <p>Auto: The iris is automatically adjusted to produce a constant video output as determined by the Level setting.</p> <p>Off: Auto iris is disabled, and control is always manual.</p> <p>Move the joystick up or down to toggle between Auto and Off. Press the Iris Open button to select the choice, or press the Iris Close button if you do not want to change the setting.</p>
LEVEL	<p>The cursor moves to a numeric value, which the system uses to try to maintain a certain light level. Changing the value of the Level setting will change the video level to which the auto iris adjusts. This setting should be adjusted if the video level in the auto iris mode is too bright or too dark. Move the joystick up or down to a value. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting.</p>
PEAK	<p>The cursor moves to a numeric value. Increasing this value will cause the auto iris circuit to react more to high-lights or “peaks” in the picture. Decreasing this value will cause it to use the average video level to adjust the iris. Move the joystick up or down to a value. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting.</p>

AUTO IR LEVEL (MODELS ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24)



The auto IR level is the light level at which the infrared filter switches IN or OUT. Following are the available settings for the Auto IR Level:

Dusk (default): approximately 6 lux (black-white) approximately 13 lux (color)

Dark: approximately 0.1 lux (black-white) approximately 2 lux (color)

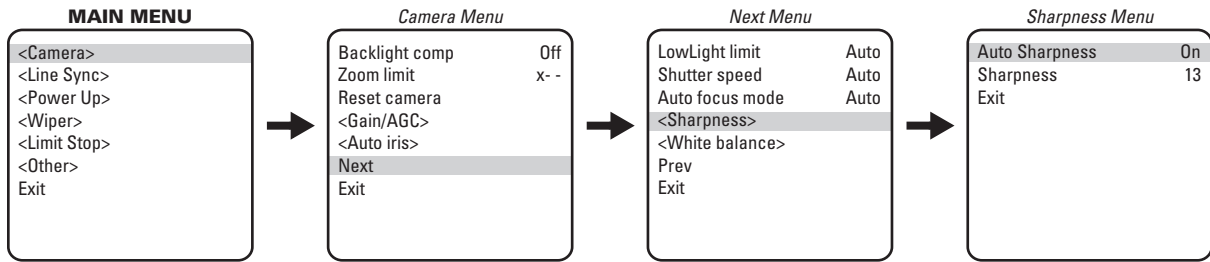
NOTES:

- If backlight compensation is ON and the IR cut filter switches OUT in normal lighting conditions, adjust the Auto IR Level to a darker setting. Refer to the *Backlight Compensation* section.
- LOW LIGHT does not mean NO LIGHT. Some type of illumination is required (street light, IR light, etc.). The camera is not sensitive to IR light when the IR cut filter is IN.

To change the auto IR level settings:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next.
5. Press the Iris Open button to enter the Next menu.
6. Position the cursor (>) beside IR Filter.
7. Press the Iris Open button to enter the IR Filter menu.
8. Position the cursor (>) beside Auto IR Level.
9. Press the Iris Open button. The cursor moves to the right.
10. Move the joystick up or down to toggle between the level settings.
11. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

AUTO SHARPNESS



The following settings are available for auto sharpness:

On: Automatically sets the sharpness of the camera.

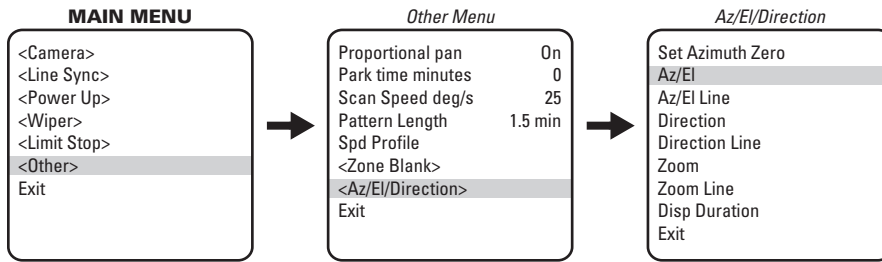
Off: The sharpness of the camera needs to be manually set (refer to Sharpness).

To change the mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next. Press the Iris Open button to go to the next camera menu.
5. Position the cursor (>) beside Sharpness. Press the Iris Open button.
6. Position the cursor (>) beside Auto Sharpness. Press the Iris Open button the cursor moves to the right.
7. Move the joystick up or down to toggle between On and Off.
8. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

AZ/EL



Az/El programs the horizontal display position of the Azimuth¹/Elevation² label.

NOTE: Az/El display is not available while you are programming or running a pattern.

The following settings are available for the Az/El label:

Off: Label is not displayed.

Left (default): Label is displayed on the left-hand side of the screen.

Center: Label is displayed in the center of the screen.

Right: Label is displayed on the right-hand side of the screen.

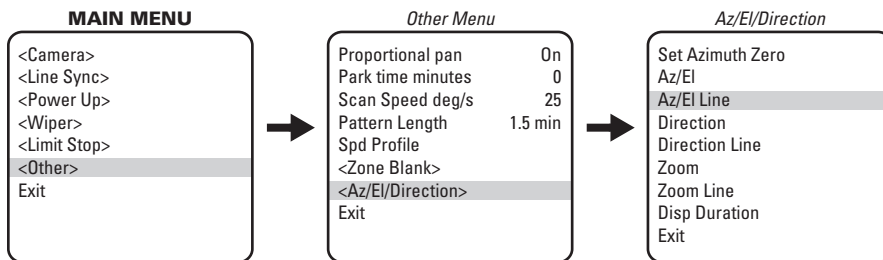
To program the horizontal label position for Az/El:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/El/Direction.
5. Press the Iris Open button to enter the Az/El/Direction menu.
6. Position the cursor (>) beside Az/El.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.
Cancel: Press the Iris Close button to cancel selection.

¹ Azimuth is the pan angle from 0° to 359°.

² Elevation is the tilt position from 33° to -83°.

AZ/EL LINE



Az/El Line controls the vertical display position of the Azimuth/Elevation label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

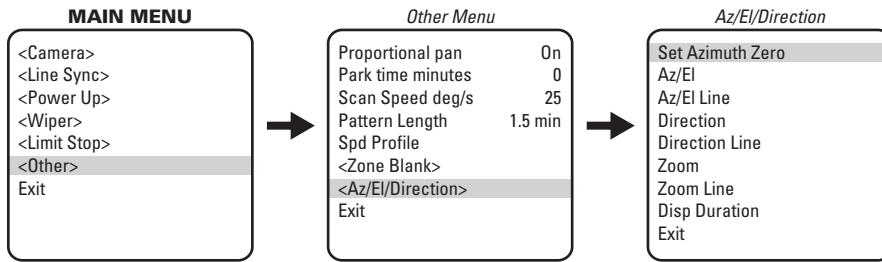
NOTE: Az/El display is not available while you are programming or running a pattern.

To program the vertical label position for Az/El:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/El/Direction.
5. Press the Iris Open button to enter the Az/El/Direction menu.
6. Position the cursor (>) beside Az/El Line.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.

Cancel: Press the Iris Close button to cancel a selection.

AZIMUTH ZERO

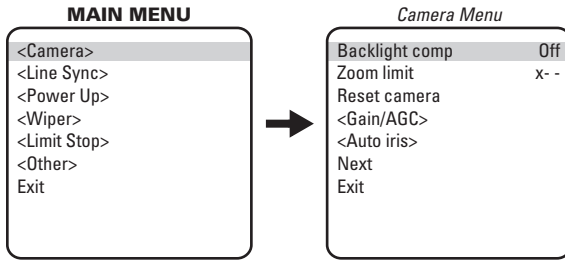


Azimuth is the pan angle from 0° to 359°. Azimuth zero is the programmed 0° point that is normally set to magnetic north. Once programmed, on-screen pan position (azimuth) and compass readings are based on the set azimuth zero point.

To set azimuth zero:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/EI/Direction.
5. Press the Iris Open button to enter the Az/EI/Direction menu.
6. Position the cursor (>) beside Set Azimuth Zero.
7. Press the Iris Open button. The programming menu for Set Azimuth Zero appears on the monitor.
8. Use the joystick to pan the Esprit unit to the desired azimuth zero (0° point) position.
9. Press the Iris Open button to set the azimuth zero position.

BACKLIGHT COMPENSATION



There are two backlight compensation modes:

On: The system uses the center 10 percent of the picture to adjust the iris. If there is a bright light source outside of this area, it will wash out to white. The camera will adjust the iris so that the object in the sensitive area is properly exposed.

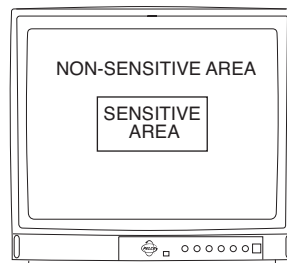
NOTE: ES30CBW18/ES31CBW18 only: If backlight compensation is ON and the IR cut filter switches OUT (black and white mode) *in normal lighting* conditions, adjust the Auto IR Level to a darker setting. Refer to the *Auto IR Level* section.

Off: Backlight compensation is not activated.

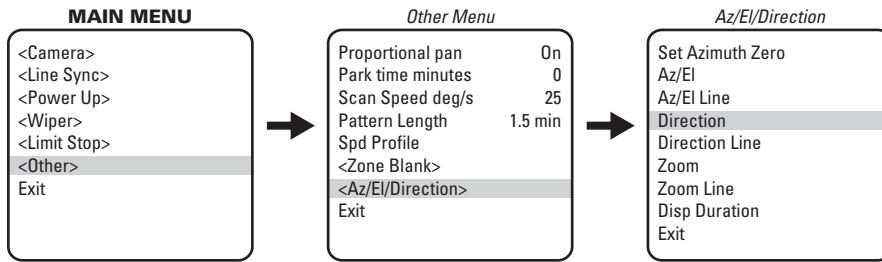
To change the backlight compensation mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Backlight Comp.
5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.
6. Move the joystick up or down to toggle between On and Off.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.



DIRECTION



Direction programs the horizontal display position of the Direction label (N, NW, NE, ...).

NOTES:

- For direction to be accurate, the azimuth zero must be set to magnetic north.
- Direction display is not available while you are programming or running a pattern.

The following settings are available for the Direction label:

Off: Label is not displayed.

Left: Label is displayed on the left-hand side of the screen.

Center: Label is displayed in the center of the screen.

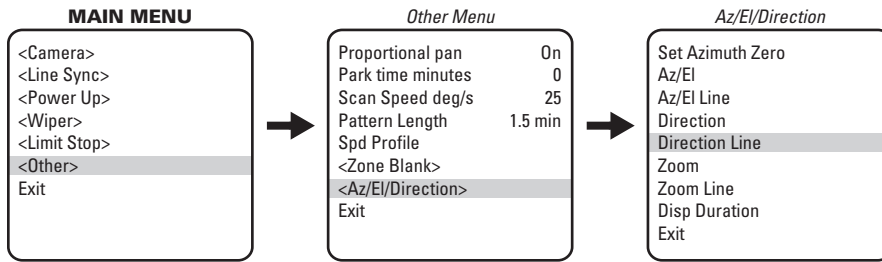
Right (default): Label is displayed on the right-hand side of the screen.

To program the horizontal label position for Direction:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/EI/Direction.
5. Press the Iris Open button to enter the Az/EI/Direction menu.
6. Position the cursor (>) beside Direction.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.

Cancel: Press the Iris Close button to cancel a selection.

DIRECTION LINE



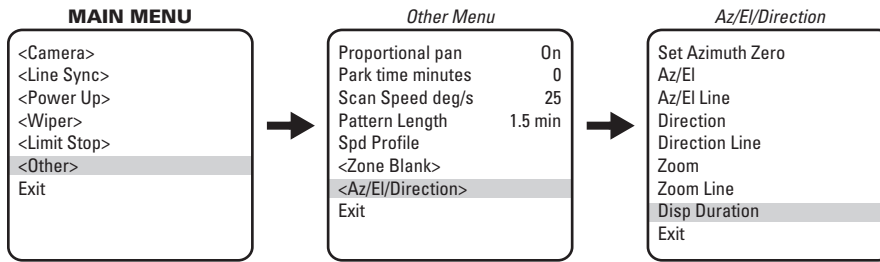
Direction Line controls the vertical display position of the Direction label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

NOTE: Direction display is not available while you are programming or running a pattern.

To program the vertical label position for Direction:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/EI/Direction.
5. Press the Iris Open button to enter the Az/EI/Direction menu.
6. Position the cursor (>) beside Direction Line.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.
Cancel: Press the Iris Close button to cancel selection.

DISPLAY DURATION



Display Duration programs the duration the Az/El, Direction, and Zoom labels are displayed on the monitor. The available settings for display duration include the following:

Constant: The label is displayed continuously.

2 Seconds (default): The label is displayed for 2 seconds after PTZ functions end.

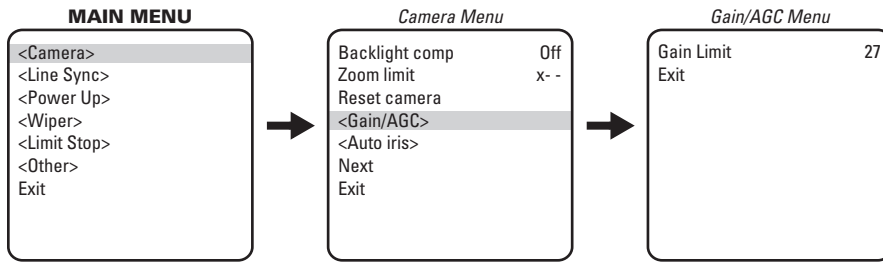
5 Seconds: The label is displayed for 5 seconds after PTZ functions end.

10 Seconds: The label is displayed for 10 seconds after PTZ functions end.

To program the display duration for the Az/El, Direction, and Zoom labels:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/El/Direction.
5. Press the Iris Open button to enter the Az/El/Direction menu.
6. Position the cursor (>) beside Disp Duration.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.
Cancel: Press the Iris Close button to cancel selection.

GAIN/AGC



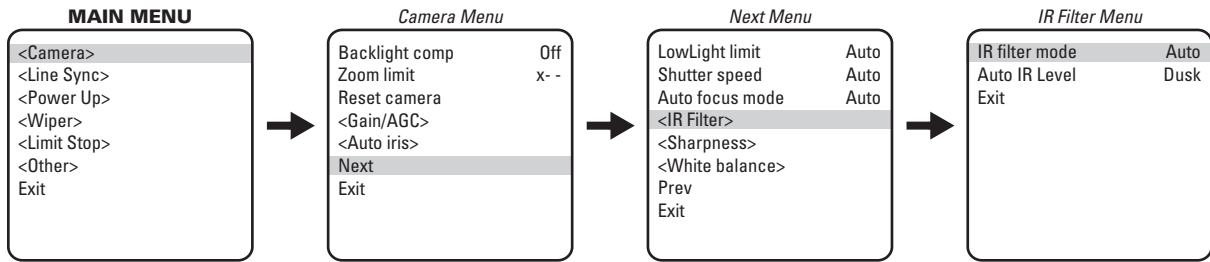
GAIN LIMIT

The gain limit sets the maximum level for the automatic gain control. Increasing the level will increase the signal level and increase the noise level of the picture.

To change the gain:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Gain/AGC.
5. Press the Iris Open button to enter the Gain/AGC menu.
6. Position the cursor (>) beside Gain Limit.
7. Press the Iris Open button. The cursor moves to the right, beside the current gain level setting (a numeric value).
8. Move the joystick up or down to change the level.
9. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

IR FILTER MODE (MODELS ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24)



There are two settings for the IR filter mode:

Auto: IR filter switches in and out automatically.

NOTES:

- Automatic shutter speed must be set to Auto for the IR filter to operate automatically. If the automatic shutter speed is disabled, the IR filter setting will automatically switch to OFF.
- If IR filter mode is changed to Auto, the Shutter Speed setting will return to Auto.

Off: IR filter is manually operated. The following presets are used to manually operate the IR filter.

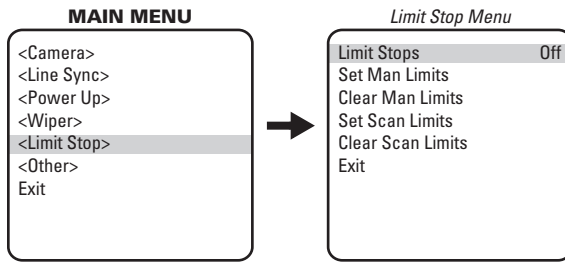
Preset 88: Filter IN (color)

Preset 89: Filter OUT (monochrome)

To change the IR filter mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next.
5. Press the Iris Open button to enter the Next menu.
6. Position the cursor (>) beside IR Filter.
7. Press the Iris Open button to enter the IR Filter menu.
8. Position the cursor (>) beside IR Filter Mode.
9. Press the Iris Open button. The cursor moves to the right, beside the word Auto or Off.
10. Move the joystick up or down to toggle between Auto and Off.
11. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

LIMIT STOPS



NOTE: Limit stops are inactive while setting items in the program menu (e.g. azimuth zero, scan limits, manual pan limits).

TURNING LIMIT STOPS ON OR OFF

To change the limit stop mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Limit Stop.
3. Press the Iris Open button to enter the Limit Stop menu.
4. Position the cursor (>) beside Limit Stops.
5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.
6. Move the joystick up or down to toggle between On and Off.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

PROGRAMMING LIMIT STOPS

Manual Limit Stops

When manual limit stops are set, a (joystick/pan and tilt keys) pan operation stops when a limit stop is reached. The manual limit stops can be set in one of two ways:

At the controller by programming presets 90 (23) and 91 (24)

or

At the controller by programming the Limit Stops menu

Presets

Refer to the documentation for your control system for programming presets, and then do the following:

1. Make sure limit stops are turned ON, then exit the menu.
2. Push the joystick left until you reach the limit you want the camera to go to on the left.
3. Program preset 90 (23).
4. Push the joystick right to the limit you want the camera to go to on the right.
5. Program preset 91 (24).

Setting presets 90 (23) and 91 (24) to the same point disables manual limit stops.

NOTE: Programming preset 90 (23) disables the manual limit stops until preset 91 (24) is set. Preset 90 (23) is the left manual limit and preset 91 (24) is the right manual limit.

Limit Stops Menu

The manual pan limit stops can be set at the controller using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Limit Stop.
3. Press the Iris Open button to enter the Limit Stop menu.
4. Move the cursor to Set Man Limits and press the Iris Open button. PRESS IRIS OPEN TO SET LEFT LIMIT appears.
5. Move the pan and tilt to the desired left limit position and press the Iris Open button to set the left manual limit. PRESS IRIS OPEN TO SET RIGHT LIMIT appears.
6. Move the pan and tilt to the desired right limit position and press the Iris Open button to set the right manual limit.
7. Exit the Limit Stop menu.

Clear Manual Stops

To clear the manual limit stops:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Limit Stop.
3. Press the Iris Open button to enter the Limit Stop menu.
4. Move the cursor to Clear Man Limits and press the Iris Open button. The cursor will flash to an asterisk (*) briefly to indicate the limits have been disabled.

Scan Limit Stops

When scan limit stops are set, the pan and tilt reverses direction during random, frame, or auto scanning when a limit stop is reached. The manual scan limit stops can be set in one of two ways:

At the controller by programming presets 92 and 93

or

At the controller by programming the Limit Stops menu

Presets

Refer to the documentation for your control system for programming presets, and then do the following:

1. Make sure limit stops are turned ON, then exit the menu.
2. Push the joystick left until you reach the limit you want the camera to go to on the left.
3. Program preset 92 (25).
4. Push the joystick right to the limit you want the camera to go to on the right.
5. Program preset 93 (26).

Setting presets 92 (25) and 93 (26) to the same point disables manual limit stops.

NOTE: Programming preset 92 (25) disables the scan limit stops until preset 93 (26) is set. Preset 92 is the left scan limit and preset 93 is the right scan limit.

Limit Stops Menu

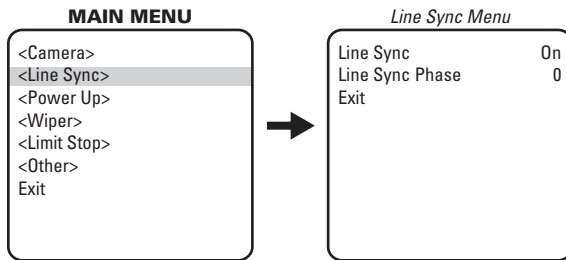
The manual pan limit stops can be set at the controller using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Limit Stop.
3. Press the Iris Open button to enter the Limit Stop menu.
4. Move the cursor to Set Scan Limits and press the Iris Open button. PRESS IRIS OPEN TO SET LEFT LIMIT appears.
5. Move the pan and tilt to the desired left limit position and press the Iris Open button to set the left manual limit. PRESS IRIS OPEN TO SET RIGHT LIMIT appears.
6. Move the pan and tilt to the desired right limit position and press the Iris Open button to set the right scan limit.
7. Exit the Limit Stop menu.

Clear Scan Limit Stops

To clear the scan limit stops, move the cursor to Clear Scan Limits and press the Iris Open button. The cursor will flash to an asterisk (*) briefly to indicate the limits have been disabled.

LINE SYNCHRONIZATION



If cameras are out of phase with each other, they may produce what appears to be vertical roll when switching between cameras.

There are two settings for line synchronization:

On: Adjust the synchronization of the power line voltage so that it is in phase with other cameras.

Off: The system synchronizes to an internal clock.

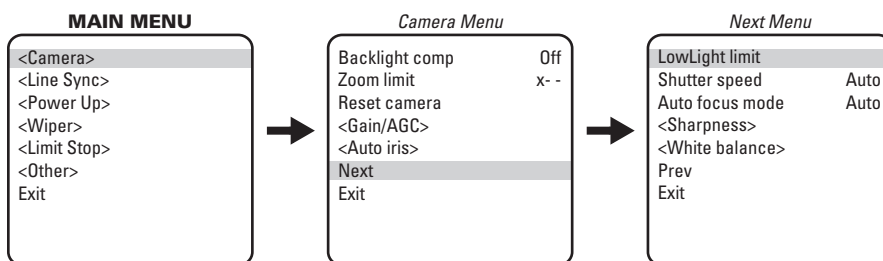
To change the line synchronization settings:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Line Sync.
3. Press the Iris Open button. The Line Sync menu appears.
4. Position the cursor (>) beside one of the choices. Press the Iris Open button.

Line Sync: The cursor moves to one of two choices: on or off. Move the joystick up or down to toggle between them. Press the Iris Open button to select the choice. If you changed to off, the camera may reset itself as it adjusts to the new synchronization. If the camera resets, it will only affect the line synchronization. It will not change any other camera parameters, such as auto focus or auto iris. Press the Iris Close button if you do not want to change the setting.

Line Sync Phase: The cursor moves to a numeric value. Move the joystick up or down to change the value. The value represents the phase angle in tenths of a degree between 0 and 359 degrees. For example, 900 is 90 degrees, 1200 is 120 degrees, and 2400 is 240 degrees. Press the Iris Open button on your keyboard to select your choice. The Line Sync setting changes to ON. The camera may reset or the picture on your monitor may wiggle when you change the phase angle. If the camera resets, it will only affect the line synchronization. It will not change any other camera parameters, such as auto focus or auto iris. Press the Iris Close button if you do not want to change the setting.

LOWLIGHT LIMIT (MODELS ES30C22/ES31C22, ES30CBW18/ES31CBW18, AND ES30CBW24/ES31CBW24)



This setting determines the maximum length of time the shutter will remain open automatically in low light conditions. There are six choices:

2 = 1/2 second 8 = 1/8 second 30 = 1/30 second
4 = 1/4 second 15 = 1/15 second 60 = 1/60 second

NOTES:

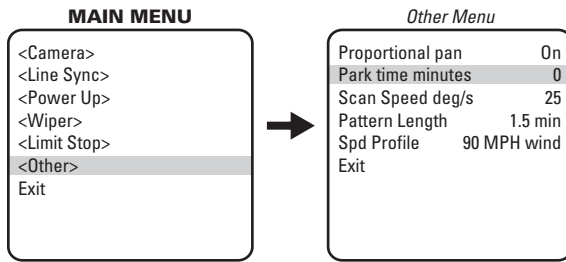
- LOWLIGHT does not mean NO LIGHT. Some type of illumination is required.
- Auto focus is automatically turned off when the shutter speed is longer than 1/8 of a second.

To change the LowLight setting:

1. On the main menu, move the joystick up or down to position the cursor (>) beside Camera.
2. Press the Iris Open button to enter the Camera menu.
3. Position the cursor (>) beside Next.
4. Press the Iris Open button to go to the Next (camera) menu.
5. Position the cursor (>) beside LowLight Limit.
6. Press the Iris Open button. The cursor moves to the right, beside the current LowLight Limit.
7. Move the joystick up or down to choose the LowLight Limit.
8. **Select:** Press the Iris Open button to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

PARK TIME MINUTES



This feature causes the system to park at preset 1 after a programmed number of minutes of control inactivity. The time can be set from 1 minute to 720 minutes (12 hours), or it can be set to zero, which disables this feature.

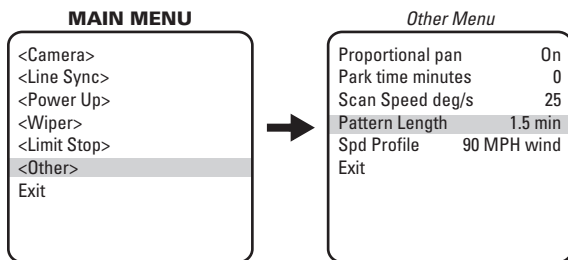
NOTE: Preset 1 must be programmed for the dome to park.

To change the park time:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Park Time Minutes.
5. Press the Iris Open button. The cursor moves to the right, beside the current park time.
6. Move the joystick up or down to change the park time.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

PATTERN LENGTH



The Esprit can do the following:

One full pattern - 1.5, 3, or 6 minutes long

or

Two half patterns - .75, 1.5, or 3 minutes long

This pattern can consist of any standard pan, tilt, or lens command. Presets, flip, and turbo are not allowed in a pattern. Zone scan can be enabled while running a pattern.

NOTE: Digital zoom and proportional pan are not available during a pattern.

To set the pattern length:

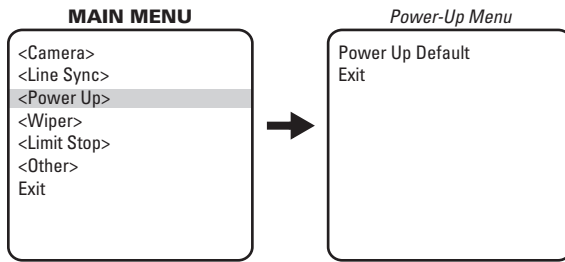
1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the menu entitled Other.
4. Position the cursor (>) beside Pattern Length.
5. Press the Iris Open button. The cursor moves to the right, beside the number of minutes (1.5, 3, or 6).
6. Move the joystick up or down to toggle through the number of minutes (1.5, 3, or 6).

 **WARNING:** If the pattern length is changed, all patterns that were stored are erased.

7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

POWER-UP MODE



This feature lets the dome resume a desired condition following power-up. The menu includes the following choices.

Default: On power-up, the system goes through a configuration cycle and stops at zero reference, showing “Configuration Done,” address, and mode settings on the screen.

Park: The system moves to preset 1 when the power-up sequence finishes. The only text on the screen is the preset label (if any is programmed).

Scan Auto: The system initiates scan mode when the power-up sequence finishes. Again, there is no text.

Scan Frame: The system initiates a frame scan when the power-up sequence finishes.

Scan Rand: The system initiates a random scan when the power-up sequence finishes.

Full Pat: The system initiates its programmed pattern when the power-up sequence finishes. The length can be set to 1.5, 3, or 6 minutes.

Half Pat 1: The system initiates the first half-pattern when the power-up sequence finishes. The length can be set to .75, 1.5, or 3 minutes.

Half Pat 2: The system initiates the second half-pattern when the power-up sequence finishes. The length can be set to .75, 1.5, or 3 minutes.

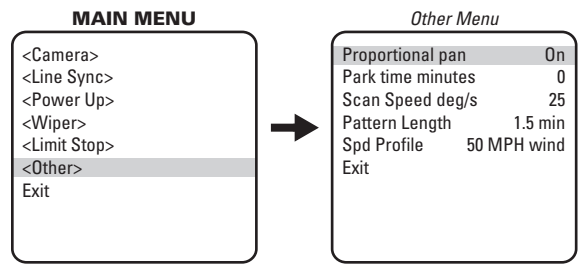
The default setting is Default.

To select the power-up mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Power Up.
3. Press the Iris Open button to enter the Power-Up menu.
4. Press the Iris Open button to move the cursor to the right.
5. Move the joystick up or down to cycle through the selections. Stop on the item you want to select.
6. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

PROPORTIONAL PAN



There are two proportional pan modes:

On: Enables the proportional pan mode. The amount of zoom controls the pan and tilt. At telephoto zoom settings, the pan and tilt speeds will be slower for a given amount of joystick deflection than at wide zoom settings. This keeps the image from moving too fast on the monitor when there is a large amount of zoom.

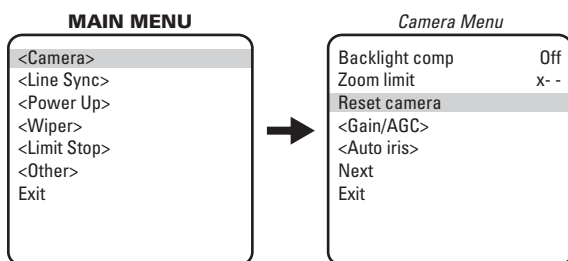
Off: Disables proportional pan mode. The pan speed will not depend on the amount of zoom.

NOTE: Proportional pan is not available during a pattern.

To change the proportional pan mode:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Proportional Pan.
5. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.
6. Move the joystick up or down to toggle between On and Off.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

RESET CAMERA



Resetting the camera returns the settings to their defaults.

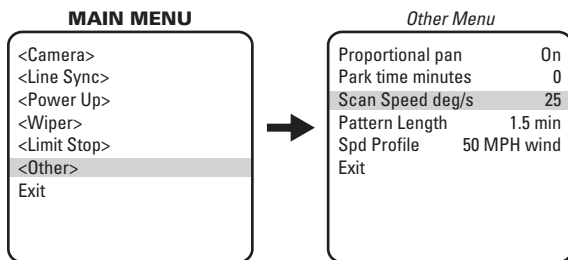
		Models ES30CBW24/ ES31CBW24	Models ES30C22/ES31C22	Models ES30CBW18/ES31CBW18	Models ES30C16/ES31C16
Default Setting	Backlight comp	Off	Off	Off	Off
	Zoom Limit	No default	No default	No default	No default
	Gain/AGC Gain Limit	25	27	<u>NTSC</u> 28 <u>PAL</u> 29	27
	Auto iris Mode Level Peak	<u>NTSC</u> Auto 106 16 <u>PAL</u> Auto 96 16	Auto 66 16	Auto 91 16	<u>NTSC</u> Auto 66 8 <u>PAL</u> Auto 57 16
	Low light limit	2	2	2	N/A
	Shutter speed	Auto	Auto	Auto	Auto
	Auto focus mode	Auto	Auto	Auto	Auto
	IR Filter IR filter mode Auto IR level	Auto Dusk	N/A N/A	Auto Dusk	N/A N/A
	Sharpness Auto sharpness Sharpness	On No default	On No default	On No default	On No default
	White balance Auto white bal R Gain B Gain	On No default No default	On No default No default	On No default No default	On No default No default

Turning off power does not reset the camera. Camera settings are retained in memory. When the power is turned back on, the settings will be the same as they were when the power was turned off.

To reset the camera:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Reset Camera.
5. Press the Iris Open button to reset the camera.

SCAN SPEED



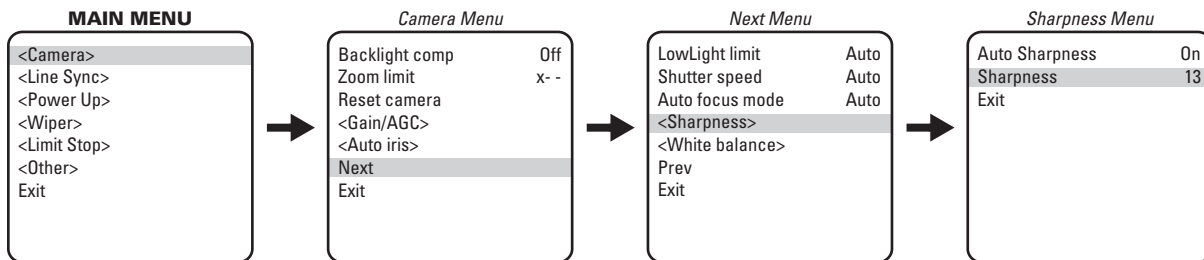
The scan speed is adjustable from 1-40 degrees per second. This occurs in three scan modes: auto, random, and frame scan.

To change the scan speed:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the menu entitled Other.
4. Position the cursor (>) beside Scan Speed deg/s.
5. Press the Iris Open button. The cursor moves to the right, beside the number of degrees.
6. Move the joystick up or down to toggle through the number of degrees (1-40) until you reach the number you want. (If set on a low number, the scan will appear to barely move but is still functioning.)
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

SHARPNESS

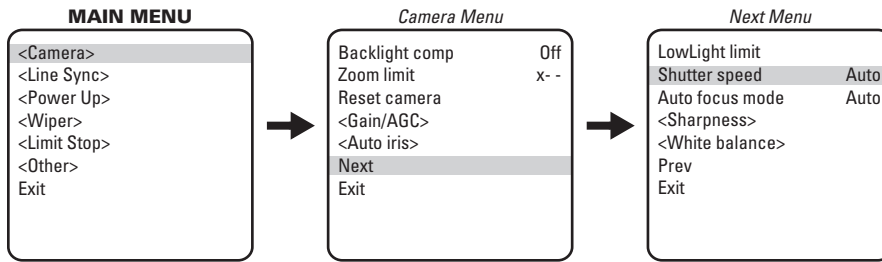


Use the Sharpness setting to manually set the sharpness of the camera.

To manually set the sharpness of the camera:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next. Press the Iris Open button.
5. Position the cursor (>) beside Sharpness. Press the Iris Open button.
6. Position the cursor (>) beside Sharpness. Press the Iris Open button the cursor moves to the right, beside the numeric value.
7. Move the joystick up or down to a value. As you change the value, you will see the sharpness change. Press the Iris Open button to select the value, or press the Iris Close button if you do not want to change the setting. If the Auto Sharpness setting is On, it will change to Off when you select a Sharpness value.

SHUTTER SPEED



There are several electronic shutter speed settings:

Auto
1/2
1/4
1/8
1/15
1/30
1/60
1/120
1/180
1/250
1/500
1/1000
1/2000
1/4000
1/10,000
1/30,000

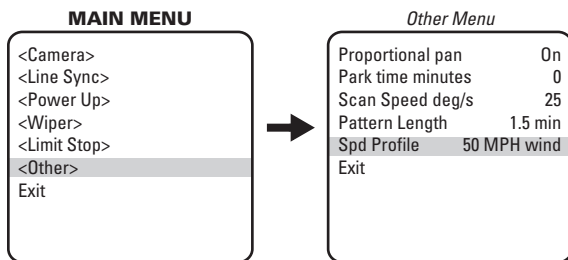
In the Auto setting the camera controls the shutter speed automatically. Increasing the shutter speed lowers the light sensitivity, but rapidly moving objects will be less blurred.

NOTE: (ES30CBW18/ES31CBW18/ES30CBW24/ES31CBW24) If the IR Filter Mode is set to Auto, the Shutter Speed setting will default automatically to the Auto setting.

To change the electronic shutter speed settings:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next.
5. Press the Iris Open button to go to the Next menu.
6. Position the cursor (>) beside Shutter Speed.
7. Press the Iris Open button.
8. The cursor moves to the right, beside the current shutter speed.
9. Move the joystick up or down to choose the shutter speed.
10. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

SPEED PROFILE



This feature allows the operator to set the wind speed conditions for the location of the Esprit system. You can set two wind speed profiles of 50 mph or 90 mph in which the system will remain operational. In both settings, the pan speed will be a maximum of 40 degrees per second. The difference will be in the turbo and preset pan speeds. The turbo and preset pan speeds are 100 degrees per second in the 50 mph wind profile setting and 50 degrees per second in the 90 mph profile.

To set the speed profile:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the menu entitled Other.
4. Position the cursor (>) beside Spd Profile.
5. Press the Iris Open button. The cursor moves to the right, beside the wind speed (50 mph wind or 90 mph wind).
6. Move the joystick up or down to toggle through the wind speeds (50 mph wind or 90 mph wind).
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

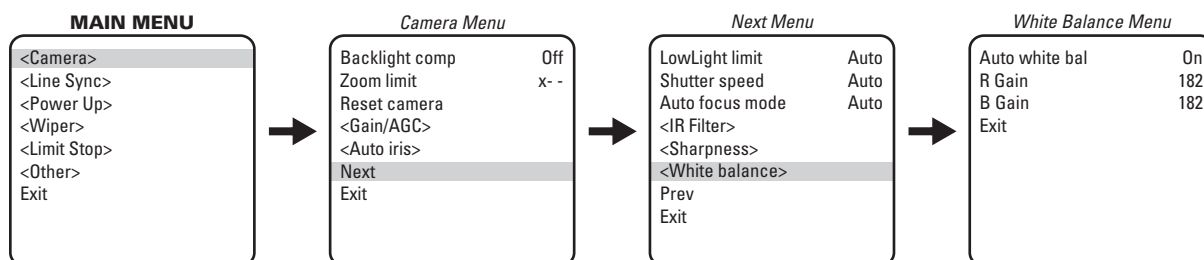
Cancel: Press the Iris Close button if you do not want to change the setting.

WHITE BALANCE

The settings for white balance are as follows:

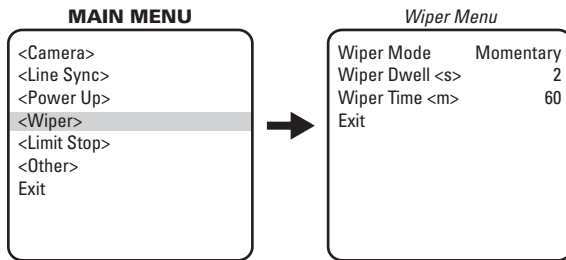
Auto white bal
R Gain
B Gain

To change the white balance settings:



1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Next.
5. Press the Iris Open button to go to the Next menu.
6. Position the cursor (>) beside White Balance.
7. Press the Iris Open button. The White Balance menu appears.
8. Position the cursor (>) beside one of the following choices and press the Iris Open button.
9. Move the joystick up or down to make a selection.
10. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

WIPER MODE



There are three wiper settings:

Wiper Mode
Wiper Dwell
Wiper Time

To change the wiper settings:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Wiper.
3. Press the Iris Open button to enter the Wiper menu.
4. Move the joystick up or down to position the cursor next to one of the wiper settings.
5. Press the Iris Open button. The cursor moves to the right.
6. Move the joystick up or down to toggle through the choices.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.
Cancel: Press the Iris Close button if you do not want to change the setting.

To operate the wiper, do the following:

Momentary Mode: To operate the wiper one full cycle, press the AUX 1 button on your controller. Each press of the button operates the wiper one full cycle, even if the AUX 1 button is latching. If AUX 1 is latching, the first press will activate the wiper (open the latch). Pressing AUX 1 a second time closes the latch, but will not cycle the wiper. Press the AUX 1 key again to cycle the wiper.

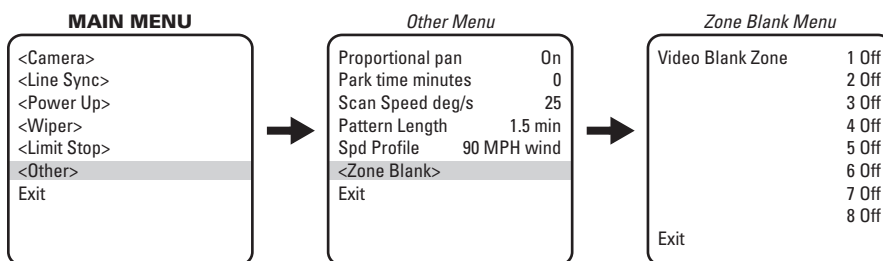
Continuous Mode: To operate the wiper press the AUX 1 button on your controller. The wiper will continue to operate until the AUX 1 button is pressed again or until the programmed cycle is completed.

NOTE: CM9740 and CM9760 matrix systems only: For the wiper to operate in continuous mode, the AUX 1 function in the camera file must be set to latching. If the AUX 1 camera file is not latching, the wiper will only operate in momentary mode, even if the Esprit wiper is programmed for continuous operation. Refer to the operation manual supplied with the CM9740 or CM9760 matrix system for instructions.

Wiper Dwell: The time between wiper cycles. The dwell time can be programmed from 2 to 30 seconds.

Wiper Time: The length of the wiper cycle. Wiper time can be programmed from 60 to 1,440 minutes (1 to 24 hours).

ZONE BLANK



The Esprit system features onscreen programmable zone blanking. This feature lets you define any zone as blanked for video (viewing/recording).

Zones can be programmed to overlap each other, although this is not recommended. If you program two zones to overlap, the title of the zone with the highest priority (zone 8 is the highest, zone 1 is the lowest) will be displayed on the monitor. This rule also applies to blanked zones that overlap. The blanking status of the zone with the highest priority will determine if the area is blanked or not. Example: Zone 1 is blanked but a portion of the zone overlaps zone 8 which is not blanked. The overlapped portion of zone 1 will be displayed on the monitor with the zone 8 label.

There are two video zone blank settings:

On: Enables video blanking.

Off: Disables video blanking.

To change the video blank zone setting:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Zone Blank.
5. Press the Iris Open button to enter the Zone Blank menu.
6. Position the cursor (>) beside the number of the zone for which you want to set the blank option.
7. Press the Iris Open button. The cursor moves to the right, beside the word On or Off.
8. Move the joystick up or down to toggle between the words On and Off.
9. **Select:** Press the Iris Open button on your keyboard to select your choice.

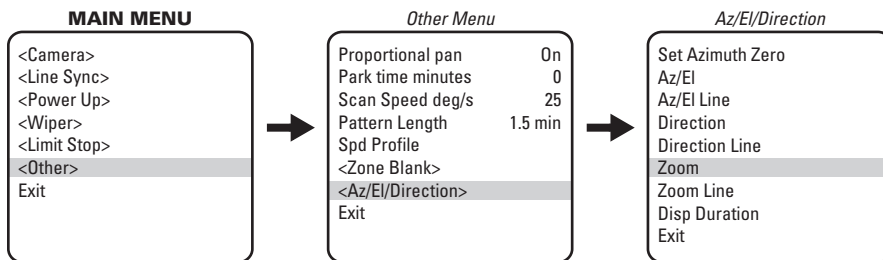
Cancel: Press the Iris Close button if you do not want to change the setting.

ZONES

Basic rules for setting zones:

1. Refer to the documentation for your control system to program zones.
2. Establish zones using the controller, prior to programming ZONE BLANK with the Esprit onscreen menu.
3. To accurately set zone areas, zoom wide to the maximum field of view.
4. Set zones moving the joystick left to right. The left position is always the start position.

ZOOM



Zoom programs the horizontal display position of the Zoom label. The following settings are available for the Zoom label:

Off: Label is not displayed.

Left: Label is displayed on the left-hand side of the screen.

Center (default): Label is displayed in the center of the screen.

Right: Label is displayed on the right-hand side of the screen.

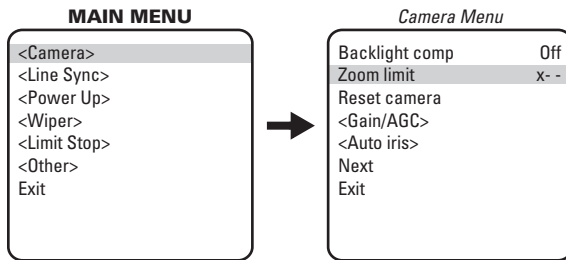
NOTE: Zoom display is not available while you are programming or running a pattern.

To program the horizontal label position for Zoom:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/EI/Direction.
5. Press the Iris Open button to enter the Az/EI/Direction menu.
6. Position the cursor (>) beside Zoom.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.
9. **Select:** Press the Iris Open button to make a selection.

Cancel: Press the Iris Close button to cancel a selection.

ZOOM LIMIT



ES30C16/ES31C16: 16X optical zoom and 10X electronic zoom, can be set for 16X, 32X, 64X, 128X, or 160X.

ES30C22/ES31C22: 22X optical zoom and 10X electronic zoom, can be set for 22X, 32X, 88X, 176X, or 220X.

ES30CBW18/ES31CBW18: 23X optical zoom and 10X electronic zoom, can be set for 23X, 32X, 92X, 184X or 230X.

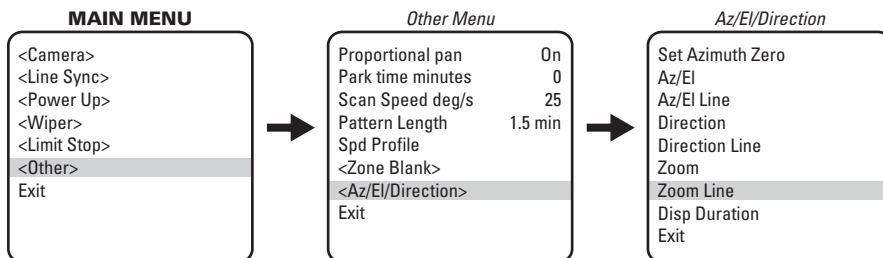
ES30CBW24/ES31CBW24: 24X optical zoom and 10X electronic zoom, can be set for 24X, 32X, 96X, 192X, or 240X.

To change the zoom limit:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Camera.
3. Press the Iris Open button to enter the Camera menu.
4. Position the cursor (>) beside Zoom Limit.
5. Press the Iris Open button. The cursor moves to the right, beside the current zoom limit.
6. Move the joystick up or down to choose the zoom limit.
7. **Select:** Press the Iris Open button on your keyboard to select your choice.

Cancel: Press the Iris Close button if you do not want to change the setting.

ZOOM LINE



Zoom Line controls the vertical display position of the Zoom label. The label may be displayed on lines 3 through 10. Line 3 is the third line from the top of the screen and line 10 is located at the bottom of the screen. Line 10 is the default setting.

NOTE: Zoom display is not available while you are programming or running a pattern.

To program the vertical label position for Zoom:

1. Program preset 95 (28). The main menu appears.
2. Position the cursor (>) beside Other.
3. Press the Iris Open button to enter the Other menu.
4. Position the cursor (>) beside Az/El/Direction .
5. Press the Iris Open button to enter the Az/El/Direction menu.
6. Position the cursor (>) beside Zoom Line.
7. Press the Iris Open button. The cursor moves to the right.
8. Move the joystick up or down to view the available selections.

9. **Select:** Press the Iris Open button to make a selection.

Cancel: Press the Iris Close button to cancel selection.

Troubleshooting

Symptom: System does not operate.

1. Check system input voltage.
2. The Esprit system is protected by a resettable overcurrent protective device located in the transformer module. Whenever a fault condition is experienced in the system causing excessive current flow through the protective device, a change occurs that will prevent current flow. The protective device will remain in this state as long as power is applied and the system fault remains. The protective device will reset itself after power has been removed for a few minutes and will operate normally when the system fault has been repaired.
3. Check the camera and lens power connections and video BNC connections.

Symptom: No control/sluggish control (Coaxitron)

1. Check for correct type and length of coax cable.
2. Check for correct coax termination (refer to the controller manual to determine proper termination of video input). Normal load termination is 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

<u>Symptom</u>	<u>Problem</u>
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

3. If pan and tilt operation is sluggish, check the controller manual to make sure the control signal is set in the extended mode, not standard mode.
4. Check that the video is terminated.

Symptom: No control (RS-422)

1. Check for correct cable type and length. The maximum cable distance for RS-422 communication over 24-gauge wire is 4,000 feet (1,219 m). Pelco recommends using shielded twisted pairs, such as Belden 9843 or similar cable, that meets or exceeds the basic requirements for EIA RS-422 or RS-485 applications.
2. Check for correct wire connections between transmitting device (such as the CM6700 Series matrix system) and Esprit system receiver. Correct connections are from the transmitting device TX+ to Esprit system RX+ and from the transmitting device TX- to Esprit system RX-.
3. Check for correct DIP switch settings.

Symptom: Ground loops

Ground loops are indicated by seeing 60 Hz noise on the video.

1. Check for resistance between the grounds of the keyboard and the system. Ideally, there should be zero ohms.
2. Remove the coax BNC connector and check for voltage between the BNC shield of the controller and the BNC shield of the system. No voltage should be detected.

It is recommended that a Pelco GIT100 ground isolation transformer be installed to eliminate the above problems.

Symptom: No video or poor video

1. Check the video and power connections to the camera.
2. Check for power to the camera from the Esprit system camera power output.
3. Check all coax BNC connectors from the camera to the monitor.
4. Make sure the controller is set for the correct camera-to-monitor viewing combination; for example, Camera 1 to Monitor 1. Refer to the controller manual for information.
5. Check for normal load termination of 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

<u>Symptom</u>	<u>Problem</u>
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

Symptom: Wiper does not work with Genex Multiplexer in Track Main mode

If you have a Genex/KBD4000/Esprit with wiper combination, in order to make the wiper function when Genex is in Track Main mode, you must do the following:

1. Call the spot monitor.
2. Call the camera.
3. Press the auxiliary ON key.

MAINTENANCE

Clean the enclosure window periodically with a mild non-abrasive detergent in water and a soft cloth to help maintain picture clarity.

If operating problems are experienced with the system, refer to the *Troubleshooting* section.

The pan and tilt is IP 66 and NEMA 4X rated. The pan and tilt left side cover must be removed to gain access to the DIP switches. When the cover is correctly reinstalled, the rating will remain in effect.

If the window wiper assembly is installed, replace worn or deteriorated wiper blades immediately. At a minimum, replace wiper blade once a year.

To order replacement wiper blades or if further maintenance is required, contact Pelco's Customer Service Department for assistance. Refer to the *Product Warranty and Return Information* section.

NOTE: The system contains no user-serviceable parts. If there is a problem with your system, it must be returned to Pelco for servicing.

APPENDIX

NOTE: Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switches settings have no effect on Coaxitron control signals.

Table A. Switch Settings for SW1

Baud Rate	Switch Setting		
	SW1-1	SW1-2	SW1-3
2400	OFF	OFF	OFF*
4800	ON	OFF	OFF*
9600	OFF	ON	OFF*

*SW1-3 is not used; set it in the OFF position.

Switch Setting				
SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
OFF*	Note (1)	Note (2)	Note (3)	Note (4)
NOTES:				
(1) SW1-5	OFF	- For controllers that have more than 32 presets.		
	ON	- For American Dynamics controllers (32 presets).		
(2) SW1-6	OFF	- For all control systems except CM9502 with <i>variable</i> speed keyboards. For CM9502 with <i>fixed</i> speed keyboards, set switch OFF.		
	ON	- For CM9502 with <i>variable</i> speed keyboards to get smoother joystick control.		
(3) SW1-7	OFF	- RS-422 transmitter is not terminated.		
	ON	- RS-422 transmitter is terminated.		
(4) SW1-8	OFF	- 1.2 volt peak-to-peak video level.		
	ON	- 1 volt peak-to-peak video level.		

*SW1-4 is not used; set it in the OFF position.

NOTE: The Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switches settings have no effect on Coaxitron control signals.

Table B. Switch Settings for SW2 (P-Type Control)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF	OFF	OFF

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
17	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	ON	ON	ON	ON	ON	OFF	OFF	OFF

Table C. Switch Settings for SW2 (D-Type Control)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF

Table C. Switch Settings for SW2 (D-Type Control) (Continued)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF

Table C. Switch Settings for SW2 (D-Type Control) (Continued)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF
104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON	OFF
108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF
110	OFF	ON	ON	ON	OFF	ON	ON	OFF
111	ON	ON	ON	ON	OFF	ON	ON	OFF
112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF
116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
117	ON	OFF	ON	OFF	ON	ON	ON	OFF
118	OFF	ON	ON	OFF	ON	ON	ON	OFF
119	ON	ON	ON	OFF	ON	ON	ON	OFF
120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF
122	OFF	ON	OFF	ON	ON	ON	ON	OFF

Table C. Switch Settings for SW2 (D-Type Control) (Continued)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
123	ON	ON	OFF	ON	ON	ON	ON	OFF
124	OFF	OFF	ON	ON	ON	ON	ON	OFF
125	ON	OFF	ON	ON	ON	ON	ON	OFF
126	OFF	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF
128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
143	ON	ON	ON	ON	OFF	OFF	OFF	ON
144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
151	ON	ON	ON	OFF	ON	OFF	OFF	ON
152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
157	ON	OFF	ON	ON	ON	OFF	OFF	ON
158	OFF	ON	ON	ON	ON	OFF	OFF	ON
159	ON	ON	ON	ON	ON	OFF	OFF	ON
160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
167	ON	ON	ON	OFF	OFF	ON	OFF	ON
168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
171	ON	ON	OFF	ON	OFF	ON	OFF	ON

Table C. Switch Settings for SW2 (D-Type Control) (Continued)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
173	ON	OFF	ON	ON	OFF	ON	OFF	ON
174	OFF	ON	ON	ON	OFF	ON	OFF	ON
175	ON	ON	ON	ON	OFF	ON	OFF	ON
176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
179	ON	ON	OFF	OFF	ON	ON	OFF	ON
180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
181	ON	OFF	ON	OFF	ON	ON	OFF	ON
182	OFF	ON	ON	OFF	ON	ON	OFF	ON
183	ON	ON	ON	OFF	ON	ON	OFF	ON
184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
185	ON	OFF	OFF	ON	ON	ON	OFF	ON
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
199	ON	ON	ON	OFF	OFF	OFF	ON	ON
200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
203	ON	ON	OFF	ON	OFF	OFF	ON	ON
204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
205	ON	OFF	ON	ON	OFF	OFF	ON	ON
206	OFF	ON	ON	ON	OFF	OFF	ON	ON
207	ON	ON	ON	ON	OFF	OFF	ON	ON
208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
211	ON	ON	OFF	OFF	ON	OFF	ON	ON
212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
213	ON	OFF	ON	OFF	ON	OFF	ON	ON
214	OFF	ON	ON	OFF	ON	OFF	ON	ON
215	ON	ON	ON	OFF	ON	OFF	ON	ON
216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
217	ON	OFF	OFF	ON	ON	OFF	ON	ON
218	OFF	ON	OFF	ON	ON	OFF	ON	ON
219	ON	ON	OFF	ON	ON	OFF	ON	ON
220	OFF	OFF	ON	ON	ON	OFF	ON	ON

Table C. Switch Settings for SW2 (D-Type Control) (Continued)

SPECTRA ADDRESS	SWITCH SETTING							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
221	ON	OFF	ON	ON	ON	OFF	ON	ON
222	OFF	ON	ON	ON	ON	OFF	ON	ON
223	ON	ON	ON	ON	ON	OFF	ON	ON
224	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
225	ON	OFF	OFF	OFF	OFF	ON	ON	ON
226	OFF	ON	OFF	OFF	OFF	ON	ON	ON
227	ON	ON	OFF	OFF	OFF	ON	ON	ON
228	OFF	OFF	ON	OFF	OFF	ON	ON	ON
229	ON	OFF	ON	OFF	OFF	ON	ON	ON
230	OFF	ON	ON	OFF	OFF	ON	ON	ON
231	ON	ON	ON	OFF	OFF	ON	ON	ON
232	OFF	OFF	OFF	ON	OFF	ON	ON	ON
233	ON	OFF	OFF	ON	OFF	ON	ON	ON
234	OFF	ON	OFF	ON	OFF	ON	ON	ON
235	ON	ON	OFF	ON	OFF	ON	ON	ON
236	OFF	OFF	ON	ON	OFF	ON	ON	ON
237	ON	OFF	ON	ON	OFF	ON	ON	ON
238	OFF	ON	ON	ON	OFF	ON	ON	ON
239	ON	ON	ON	ON	OFF	ON	ON	ON
240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
241	ON	OFF	OFF	OFF	ON	ON	ON	ON
242	OFF	ON	OFF	OFF	ON	ON	ON	ON
243	ON	ON	OFF	OFF	ON	ON	ON	ON
244	OFF	OFF	ON	OFF	ON	ON	ON	ON
245	ON	OFF	ON	OFF	ON	ON	ON	ON
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON
248	OFF	OFF	OFF	ON	ON	ON	ON	ON
249	ON	OFF	OFF	ON	ON	ON	ON	ON
250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON

Specifications

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs. Reset feature enabled when power becomes unstable or interrupted.
Power Requirements	Maximum power consumption is 50 vA per system
Heater and Defroster	Thermostatically controlled heater consumes 10 watts and cycles on at 40°F (5°C) and off at 60°F (16°C)
Defogger	The window defogger consumes 3 watts and cycles on at 70°F (21°C) and off at 85°F (29°C)
Electrical Connections	Two power source connections made at mount location with wire splices and one ground wire splice; one BNC receptacle and four wire splices at mount location for RS-422 D and P protocols; two wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 ft (30 m)

MECHANICAL

Construction	
System	Die-cast, extruded and sheet aluminum; stainless steel hardware
EWM Wall Mount	Aluminum
EPA Pedestal Adapter	Aluminum
Finish	
System	Gray polyester powder coat, anodized
EWM Wall Mount	Gray polyester powder coat
EPA Pedestal Adapter	Gray polyester powder coat
Viewing Window	0.23-inch (5.84 mm) thick, optically clear, polycarbonate with proprietary impact resistant UV rated coating
Window Viewing Area	2-inch (5 cm) diameter

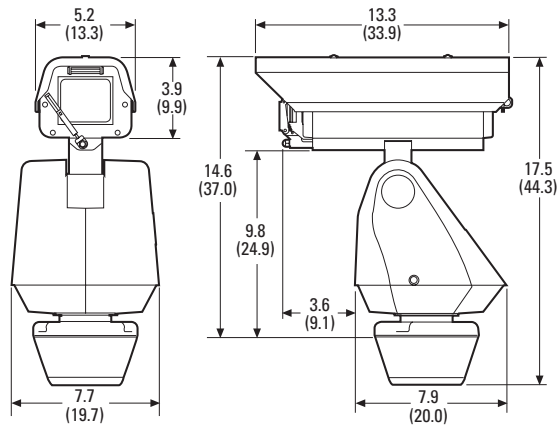
CAMERAS

Scanning System	2:1 interlace
ES30C16/ES31C16 and	
ES30C22/ES31C22	2:1 interlace
ES30CBW18/ES31CBW18	2:1 interlace
ES30CBW24/ES31CBW24	2:1 interlace
Image Sensor	1/4-inch
Effective Pixels	
ES30C16/ES31C16 NTSC	768 (H) x 494 (V)
ES30C16/ES31C16 PAL	752 (H) x 582 (V)
ES30CBW18/ES31CBW18 NTSC	724 (H) x 494 (V)
ES30CBW18/ES31CBW18 PAL	724 (H) x 582 (V)
ES30C22/ES31C22 NTSC	768 (H) x 494 (V)
ES30C22/ES31C22 PAL	752 (H) x 582 (V)
ES30CBW24/ES31CBW24 NTSC	768 (H) x 494 (V)
ES30CBW24/ES31CBW24 PAL	752 (H) x 582 (V)
Horizontal Resolution	
ES30C16/ES31C16	>470 TV lines(NTSC) >460 TV lines (PAL)
ES30CBW18/ES31CBW18	>470 TV lines (NTSC) >470 TV lines (PAL)
ES30C22/ES31C22	>470 TV lines (NTSC) >460 TV lines (PAL)
ES30CBW24/ES31CBW24	>520 TV lines (NTSC) >520 TV lines (PAL)
Focal Length	
ES30C16/ES31C16	3.9 mm to 63 mm optical
ES30CBW18/ES31CBW18	3.6 mm to 82.8 mm optical
ES30C22/ES31C22	4 mm to 88 mm optical
ES30CBW24/ES31CBW24	3.8 mm to 91.2 mm optical

Zoom Ratio		
ES30C16/ES31C16	16X optical zoom, 10X electronic zoom	
ES30CBW18/ES31CBW18	23X optical zoom, 10X electronic zoom	
ES30C22/ES31C22	22X optical zoom, 10X electronic zoom	
ES30CBW24/ES31CBW24	24X optical zoom, 10X electronic zoom	
Digital Slow Shutter	Auto/manual speed selection	
Horizontal Angle of View		
ES30C16/ES31C16	43° at 4 mm wide zoom; 3° at 64 mm telephoto zoom	
ES30CBW18/ES31CBW18	54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom	
ES30C22/ES31C22	47° at 4 mm wide zoom; 2° at 88 mm telephoto zoom	
ES30CBW24/ES31CBW24	50.7° at 3.8 mm wide zoom; 2.3° at 91.2 mm telephoto zoom	
Focus	Automatic and manual override	
Sensitivity		
ES30C16/ES31C16	1 lux at f1.6 at signal level of 40 IRE, gain high (AGC on)	
ES30CBW18/ES31CBW18	.08 lux at 1/2-second shutter speed (color)	
	.3 lux at 1/60-second shutter speed (B-W)	
	.013 lux at 1/2-second shutter speed (B-W)	
ES30C22/ES31C22	.02 lux at 1/2-second shutter speed	
ES30CBW24/ES31CBW24	.005 lux at 1/2-second shutter speed (color)	
	.015 lux at 1/60-second shutter speed (B-W)	
	.0005 lux at 1/2-second shutter speed (B-W)	
Sync System	AC line lock, phase adjustable via remote control*	
White Balance	Automatic with manual override*	
Shutter Speed Models		
ES30C16/ES31C16	1/60 to 1/10,000	
ES30C16-X/ES31C16-X	1/50 to 1/10,000	
ES30CBW18/ES31CBW18	1/2 to 1/30,000 NTSC	
ES30CBW18-X/ES31CBW18-X	1/3 to 1/30,000 PAL	
ES30C22/ ES31C22	1/2-1/30,000	
Iris Control	Automatic with manual override*	
Gain Control		
ES30C16/ES31C16	Automatic with manual override	
ES30C22/ES31C22	Automatic/OFF*	
ES30CBW18/ES31CBW18	Automatic/OFF*	
ES30CBW24/ES31CBW24	Automatic/OFF*	
Video Output	.714V ± .07V (100 IRE ± 10 IRE)	
Signal-to-Noise Ratio		
ES30C16/ES31C16	>46 dB	
ES30CBW18/ES31CBW18	>50 dB	
ES30C22/ES31C22	>50 dB	
ES30CBW24/ES31CBW24	>50 dB	
Weight	<u>With Pedestal Adapter</u>	<u>With Wall Mount</u>
Standard w/IOP	20 lb (9.0 kg)	22 lb (9.9 kg)
With Wiper and IOP	21 lb (9.5 kg)	23 lb (10.4 kg)

*Manual control of camera setup functions can be done with CM6700, CM8500, CM9500, CM9760 and MPT9500 controllers, but not with CM7500, MPT9000 or KBD9000 controllers.

(Design and product specifications subject to change without notice.)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and VW5700 Series window wiper (excluding wiper blades).
- Two years (except lamp and color wheel) on Digital Light Processing (DLP®) displays. The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
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This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C307M	9/00	Original version.
C307M-A	3/01	Added RS-422 and wiper functions material to the <i>Troubleshooting</i> section.
C307M-B	8/02	Revised per ECO 02-8063.
C307M-C	9/02	Revised model descriptions and specifications.
C307M-D	11/02	Revised installation instructions for addition of alignment label.
C307M-E	6/03	Added 24 VAC wire chart.
C307M-F	8/03	Revised per ECO 03-9210 for new camera design.
C307M-G	2/04	Referenced wire clamps per ECO 04-9710. Revised signal to noise ratio for the ES30C22/ES31C22.
C307M-H	1/05	DIP switch SW1-8 functionality changed to video level per ECO 02-8186.
C307M-I	11/05	Added operation and programming information. Added information on ES30CBW24/ES31CBW24. Updated layout.



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